HydroGeoLogic, Inc
Exceeding Expectations

Kansas City Operations

May 3, 2010

Ms. Nancy Swyers, P.E.
Task Order Project Officer
U. S. Environmental Protection Agency Region 7
SPFD Division
901 North 5th Street
Kansas City, Kansas 66101

RE: 2009 GET System Annual Performance Summary Report
10th Street OU2 Superfund Site, Columbus, Nebraska
U. S. EPA Region 7 AES Contract No. EP-S7-05-05, Task Order No.0002

Dear Ms. Swyers:

Please find attached two copies of the *2009 GET System Annual Performance Summary Report, 10th Street OU2 Superfund Site, Columbus, Nebraska*. This document is also provided in electronic format on the attached CD. Please call Laura Splichal at 816-444-8270 if you have any questions regarding this submittal.

Sincerely,

Laura Splichal

Laura Splichal, CHMM
Task Order Manager
CDM Federal Programs Corporation

Robert C. Overfelt, P.G., CHMM
AES Program Manager
HydroGeoLogic, Inc.

Attachments

cc: D. Nicoski – EPA
B. Pedicino – EPA
N. Harris – NDEQ
M. Schlebusch – CDM
B. Kaspzyk – CDM
C. Thomerson – City of Columbus (CD only)

10th_GET 2009 Annual PSR_ltr.doc

6340 Glenwood, Suite 200, Building #7, Overland Park, KS 66202
Phone: (913) 317-8860 Fax: (913) 317-8868
www.hgl.com

2009 GET System Annual Performance Summary Report
10TH Street OU2 Superfund Site
Columbus, Nebraska

Prepared for

U.S. Environmental Protection Agency
Region 7
Architect and Engineering Services Contract EP-S7-05-05

May 1, 2010

HydroGeoLogic, Inc
Exceeding Expectations

6340 Glenwood, Suite 200
Overland Park, Kansas 66202
(913) 317-8860

CDM

9200 Ward Parkway, Suite 500
Kansas City, Missouri 64114
(816) 444-8270

2009 GET System Annual Performance Summary Report 10th Street OU2 Superfund Site Columbus, Nebraska

Architect and Engineering Services Contract EP-S7-05-05
Task Order 0002

Prepared for

U.S. Environmental Protection Agency
Region 7
901 North 5th Street
Kansas City, Kansas 66101

Prepared by

HydroGeoLogic, Inc.
6340 Glenwood, Suite 200
Overland Park, Kansas 66202

May 1, 2010

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LIST OF ACRONYMS AND ABBREVIATIONS

AES	Architect and Engineering Services
AS/SVE	air sparging/soil vapor extraction
bgs	below ground surface
CDM	CDM Federal Programs Corporation
CICA	Columbus Institutional Control Area
cis-1,2-DCE	cis-1,2-dichloroethene
EPA	U.S. Environmental Protection Agency
EQ	equalization
EVS	Environmental Visualization System
EW	extraction well
FMGP	former manufactured gas plant
GAC	granular activated carbon
GET	groundwater extraction and treatment
gpm	gallons per minute
HCl	hydrochloric acid
HGL	HydroGeoLogic, Inc.
HDPE	high density polyethylene
ISCO	in situ chemical oxidation
IWS	in-well stripper
$KMnO_4$	potassium permanganate
LAN	local area network
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
MCL	maximum contaminant level
MSDS	Material Safety Data Sheet
MW	monitoring well
NDEQ	Nebraska Department of Environmental Quality
NDHHS	Nebraska Department of Health and Human Services
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NSF	National Sanitation Foundation
NTU	nephelometric turbidity unit

O&F	operational and functional
O&M	operation and maintenance
OHM	One Hour Martinizing
OU	operable unit
PAHs	polycyclic aromatic hydrocarbons
PC	personal computer
PCE	tetrachloroethene
PLC	programmable logic controller
ppm	parts per million
PRP	potentially responsible party
PVC	polyvinyl chloride
RA	removal assessment
RAO	remedial action objective
RI/FS	remedial investigation/feasibility study
ROD	Record of Decision
RSE	remedial system evaluation
RTU	remote telemetry unit
SCADA	supervisory control and data acquisition
SDWA	Safe Drinking Water Act
S.U.	standard unit
SWL	static water level
TCE	trichloroethene
UPRR	Union Pacific Railroad
USGS	United States Geological Survey
VOC	volatile organic compound
VFD	variable frequency drive

2009 GET SYSTEM ANNUAL PERFORMANCE SUMMARY REPORT
10TH STREET OPERABLE UNIT 2 SITE
COLUMBUS, NEBRASKA

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 tasked HydroGeoLogic, Inc. (HGL) to conduct remedial action activities at the 10th Street Operable Unit (OU) 2 Site in Columbus, Nebraska. This work is being executed under Architect and Engineering Services (AES) Contract No. EP-S7-05-05, Task Order Number 0002. CDM Federal Programs Corporation (CDM) is a team subcontractor to HGL under this contract and has a key role on the project.

The groundwater extraction and treatment (GET) system is one of three active components of the site remedy. An air sparge/soil vapor extraction (AS/SVE) system at the One Hour Martinizing (OHM) source area, and in situ chemical oxidation (ISCO) treatment at the OHM source area and downgradient locations are ongoing components of the site remedy. Information regarding the AS/SVE system and ISCO at the OHM source area is included in separate reports. This report summarizes the performance of the GET system and ISCO treatment downgradient of OHM in the groundwater contamination plume from January 1, 2009 to December 31, 2009. A discussion of system inspections, maintenance activities, system performance evaluation, monitoring events, and recommendations for operational improvements are included.

The GET system is currently being operated by the City of Columbus through a cooperative agreement with EPA. HGL and CDM provide engineering support to the city as needed and have compiled much of the information contained in this report from the city's quarterly reports and verbal and on-site meetings with city personnel.

1.1 SITE LOCATION AND DESCRIPTION

The 10th Street Site is located in the south-central portion of the City of Columbus in Platte County, Nebraska (Figure 1.1). The 10th Street Site is composed of two OUs. OU1 includes an area generally south of the Union Pacific rail line that crosses the central portion of the city and includes the southern municipal well field where groundwater contamination was originally identified. The origin of groundwater contamination was initially traced to two dry cleaning operations (Liberty Cleaners and Jackson Services) located south of the railroad tracks. Subsequent groundwater sampling events indicated an extended area of contamination existed upgradient of the original site area. Four removal assessments (RAs) conducted between 1998 and 2000 showed the plume extended to a third primary source area, the Prestige Cleaners (formerly OHM and hereafter referred to as the OHM source area), located over 0.5-mile north of OU1. This extended site area comprises OU2; the subject area of the current long-term response action. The two OUs and identified source areas are shown on Figure 1.2.

The OHM source area includes the OHM building and paved surfaces. The OHM source area is bordered by U. S. Highway 30/23rd Street to the north, an alley to the south, a fast-food restaurant to the west, and 25th Avenue to the east. Soil and groundwater at the OHM source area are contaminated with tetrachloroethene (PCE) and trichloroethene (TCE). The area surrounding the site is a mixture of commercial and residential buildings.

Groundwater contamination associated with OU2 consists of a volatile organic compound (VOC) plume bounded roughly by 7th Street, Highway 30/23rd Street, 16th Avenue, and 29th Avenue. PCE and TCE are the primary contaminant constituents in the VOC groundwater plume. Elevated levels of arsenic also have been detected in some groundwater samples, but arsenic is believed to be naturally occurring in soils at the site and is not addressed by the remedial actions. The City of Columbus southern municipal well field is partially located inside the southwestern edge of this VOC plume, which groundwater sampling indicates extends between OHM and the southern municipal well field. VOCs have been detected in five of the seven municipal wells of the southern municipal well field and in the city's water distribution system. The VOC-contaminated groundwater plume is situated beneath a mixture of commercial and residential properties in the southwest, central, and north-central portions of the city.

The southern municipal well field consists of seven wells located near the city's south water treatment plant on 10th Street: W-1, W-2, W-4, W-8, W-11, W-12, and W-13. The City of Columbus has two additional areas from which it can draw groundwater: the five municipal wells in the northern well field (W-14, W-16, W-17, W-18, and W-19) and municipal wells W-10 and W-15. W-10 is located in the northeastern portion of the city but has not been used since 1981. W-15 is located 22 miles east of the city and is used only for emergency purposes. Figure 1.3 illustrates the locations of all municipal wells. The entire water collection and distribution system is controlled by a supervisory control and data acquisition (SCADA) system at the city's south water treatment plant located at 10th Street and 28th Avenue. Water from the treatment plant is sent to the distribution system at the plant reservoir or the water tower south of the 5th Street/28th Avenue intersection.

1.2 SITE HISTORY

The 10th Street Site first came to the attention of the Nebraska Department of Health, now the Nebraska Department of Health and Human Services (NDHHS), in November 1983 when VOCs were detected in a routine sampling event of the city's municipal wells. Follow-up analysis of the municipal wells also detected TCE at concentrations exceeding the Safe Drinking Water Act (SDWA) maximum contaminant level (MCL) for TCE of 5 micrograms per liter (μg/L).

In April 1987, the site was referred to EPA for investigation. The 10th Street Site was proposed for the Superfund National Priorities List (NPL) in October 1989 to provide emergency response, as well as long-term cleanup. The 10th Street OU2 Site was placed on the NPL in August 1990.

A remedial investigation/feasibility study (RI/FS) was conducted by EPA between 1990 and 1993. Potential contaminant sources and the extent of groundwater contamination were investigated during the RI/FS. A network of monitoring wells was installed to monitor

contaminants in the groundwater. During the RI/FS, the extent of groundwater contamination was generally restricted to the vicinity of the southern municipal well field. An EPA Record of Decision (ROD) was signed for the site in February 1995 (EPA, 1995). Recognizing that contaminant concentrations in municipal and monitoring wells had been decreasing during post RI/FS sampling events, EPA selected sampling of municipal and monitoring wells and institutional controls to limit exposure to contamination from the 10th Street Site. The remedy also included a contingency for extraction of contaminated groundwater with treated water discharge to the Loup River approximately ½ mile south of the 10th Street Site via the city storm sewer system under a National Pollutant Discharge Elimination System (NPDES) permit with the State of Nebraska.

Follow-up quarterly groundwater monitoring by EPA in 1997 to 1998 indicated that increasingly higher concentrations of PCE and TCE were detected along the northern boundary of the monitoring well network installed during the RI/FS between 1990 and 1993.

In response to the results from 1997 and 1998 quarterly sampling events, a series of RAs were conducted to further investigate the 10th Street OU2 Site. Screening results of groundwater and soil samples collected during the Phase 1 RA indicated that VOC contamination appeared to be originating from the OHM source area. Delineation of shallow VOC-contaminated groundwater indicated that the contaminant plume initially flows southeast; however, the southern municipal well field appeared to redirect the plume towards the south-southwest. In September 1999 EPA installed additional monitoring wells to monitor the contaminant plume upgradient of the initial study area. Through a fund-lead removal action, EPA initiated treatment of highly contaminated soil and groundwater at the OHM source area in October 2000. The source area treatment system consists of an AS/SVE system. EPA continues to operate the AS/SVE system as part of the interim remedial action. This system was declared operational and functional by EPA and the Nebraska Department of Environmental Quality (NDEQ) in 2004 and is not discussed further in this report.

EPA conducted a treatability study upgradient of the southern municipal well field with two types of in-well stripper (IWS) treatment systems beginning in July 2000. The treatability study was completed in February 2002, and this technology was evaluated in the FS as a potential groundwater remedy.

In February 2001, EPA prepared a second RI that incorporated the data gathered from RAs and 1999-2000 quarterly groundwater monitoring results.

EPA issued an interim action ROD for the 10th Street OU2 Site in September 2001 (EPA, 2001). The purpose of the interim ROD was to implement an interim remedial action to protect the southern municipal well field from groundwater contaminants, before implementation of a final sitewide remedy. The interim ROD specified the following early interim action remedy:

- Extraction of contaminated groundwater at municipal well W-1
- Plume interception by extraction of contaminated groundwater upgradient of the city's southern municipal well field

- Treatment, if necessary, of contaminated groundwater extracted from municipal well W-1 and the plume interception extraction wells. The interim ROD specified three discharge options for the treated groundwater:

  - Discharge to surface water through the city storm sewer system
  - Discharge to the city municipal water treatment system
  - Other reuse options

- Continued operation of the AS/SVE system at the OHM source area

CDM prepared a performance-based design package for the GET system in 2001-2002 and procured the construction subcontractor (CDM, 2002b). As part of the remedial design effort, CDM evaluated the three discharge options in a technical memorandum (CDM, 2002a). The discharge option selected was a combination of potable water reuse and surface water discharge. Extracted groundwater would first be treated to meet the discharge limits before being discharged to the city's south water treatment plant and/or surface water. Discharge limits are summarized in Table 1.1. This option provided the best use of water resources. Discharge to surface water through the city storm sewer allows for consistent operation of the plume interception extraction wells and municipal well W-1 when the city's available potable water storage capacity is exceeded. Discharge for potable water reuse has the dual advantage of providing the city with groundwater that consistently meets MCLs and also not burdening the city's storm sewer system. Another advantage of the preferred discharge option is that it uses a single treatment facility, which reduces capital costs, minimizes operation and maintenance (O&M) costs, and controls costs associated with monitoring its effectiveness. Routine monitoring was implemented to evaluate the efficiency of the treatment system and ensure that it was protective of the potable water supply.

In early 2003, EPA was notified by a potentially responsible party (PRP) of the presence of a former manufactured gas plant (FMGP) site on the south side of the Union Pacific Railroad (UPRR) tracks, across from the proposed location for extraction well EW-03. Site records indicated that significant groundwater contamination existed at the FMGP site; therefore, placing an extraction well in close proximity to the FMGP site may cause contamination from the FMGP site to flow into the extraction well. The groundwater model developed by CDM was used to identify a new location for EW-03 so the FMGP site would be outside of the capture zone.

In October 2003, the City of Columbus passed and adopted Ordinance Number 03-33 regarding private wells located within the Columbus Institutional Control Area (CICA). CICA is defined by the area bounded by Mahood Drive/24th Street on the north, the Loup River on the south, 33rd Avenue on the west, and 16th Avenue on the east. This ordinance allows existing private wells within CICA to remain in place if reasonable safeguards are implemented so that there is no unreasonable likelihood of human contact with the contaminants in the groundwater. In addition, this ordinance prohibits the installation of new water wells within the CICA.

The GET system consists of four groundwater extraction wells (EW-01R, EW-02C, EW-03, and EW-04) and municipal well W-1 to intercept the plume, and a packed column air stripper for treatment of contaminated groundwater. The design was completed in October 2002 and included only three extraction wells. Construction of the GET system began in September 2003 and was completed in March 2004. The system began full-scale operation and discharge to the city storm sewer system in April 2004 with extraction wells EW-01R, EW-02C, EW-03, and municipal W-1. In May 2005, the system began providing the treated water to the city's south water treatment plant. EPA installed an additional extraction well (EW-04) in July 2005 to extend the capture area of the GET system to the east. After the GET system operational and functional (O&F) testing, which included a 14-day sampling event followed by an 8-week period of field sampling, the system was declared O&F on January 11, 2006.

In May 2005, CDM completed a final FS to develop and screen sitewide remedial alternatives for the 10th Street OU2 Site. Complete details of the FS procedures and results are provided in the FS report (CDM, 2005c).

EPA issued a final ROD (EPA, 2005) for the 10th Street OU2 Site in September 2005. The purpose of the final ROD was to select a remedy to address sitewide groundwater contamination at the 10th Street OU2 Site. The goals of the selected remedy were to:

- Prevent human exposure to contaminated groundwater and soil
- Ensure protection of the city's southern municipal well field
- Further reduce contaminant concentrations at the OHM source area
- Reduce the highest groundwater contaminant concentrations using a treatment that does not require intensive operation and maintenance

The remedial action objectives (RAOs) for OU2 are to:

- Control migration of soil contaminants into groundwater.
- Reduce risks associated with PCE and TCE in soil at source areas.
- Reduce concentrations of PCE and TCE in groundwater at the source areas and the core contamination of the groundwater plume north of the GET system extraction wells.
- Intercept and control the migration of the groundwater contaminant plume.
- Prevent domestic exposures to private drinking water wells within the groundwater contaminant plume.
- Prevent the development and use of the three source properties for residential housing, schools, child care facilities, and playgrounds.

- Restrict the construction or installation of any new water wells on the three source properties to groundwater monitoring wells or remediation wells.

- Prevent the excavation of soils at the OHM source area except by prior written approval from EPA and NDEQ and ensure that any excavations are conducted in accordance with appropriate worker protection and soil disposal requirements.

The major components of the selected remedy for the contaminated groundwater plume include:

- Continued operation of the AS/SVE system at the OHM source area

- Continued operation of the GET system

- ISCO upgradient of the GET system to supplement sitewide groundwater remediation

EPA has adopted the following remediation goals which are shown in Table 1.1:

- 60 micrograms per kilogram (μg/kg) for PCE in soil at the OHM source area

- 60 μg/kg for TCE in soil at the OHM source area

- 5 μg/L for PCE in groundwater

- 5 μg/L for TCE in groundwater

- 70 μg/L for cis-1,2-dichloroethene (cis-1,2-DCE) in groundwater

A chemical oxidant injection treatability study was conducted under the current AES contract (Task Order 009) using potassium permanganate ($KMnO_4$) injections within the core of the groundwater contaminant plume to evaluate the efficacy of full-scale implementation of this treatment technology. The treatability study was conducted from March 2006 through June 2006 (HGL, 2006b). A design package for full-scale implementation of ISCO treatment in the area upgradient of the GET system extraction wells was prepared in June 2006 (HGL, 2006a). EPA procured remedial action contractor, Lee & Ryan Environmental Consulting, Inc., that has completed five rounds of $KMnO_4$ injections within the plume as summarized in Table 1.2.

The influent pipeline for the GET system that runs on the south side of the UPRR tracks was relocated north of the tracks in response to near- and long-term construction and planning by UPRR. CDM completed the design in November 2008. EPA procured a contractor to implement the design, and the work was completed in April 2009. The revised alignment is shown in Figure 1.4.

EPA headquarters initiated a remedial system evaluation (RSE) of the AS/SVE and GET systems currently operating at the 10th Street Site, and the ISCO injections being conducted by Lee and Ryan, Inc. in 2009 (GeoTrans, 2010). The RSE was conducted by an outside consultant; GeoTrans, Inc. Recommendations made in the RSE report are discussed in Section 1.4.

1.3 TREATMENT SYSTEM DESCRIPTION

The GET system contains four primary components:

1) Four groundwater extraction wells (EW-01R, EW-02C, EW-03, and EW-04) and one municipal well (W-1)
2) Yard piping from extraction wells and municipal well W-1 to the treatment system
3) Electrical and communication conduit from extraction wells to the GET system treatment building
4) Packed column air stripping treatment system
5) Treated groundwater discharge system

Figure 1.4 illustrates the location of the treatment system building with respect to the extraction wells and the discharge points. Figure 1.5 illustrates the GET system process flow diagram.

The design flow rate for the GET system is 1,400 gallons per minute (gpm) and the maximum flow rate is 1,820 gpm (Table 1.3). Extraction wells EW-01R, EW-03, and EW-04 are screened over the bottom portion of the unconfined aquifer from 50.5 feet below ground surface (bgs) to the aquitard for the confined aquifer (approximately 65-70 feet bgs). Extraction well EW-02C is screened across 20 feet of the confined aquifer directly beneath the clay layer aquitard. Municipal well W-1 is screened over both the unconfined and confined aquifers, with the majority of the well open to the confined aquifer. The design pumping rates were chosen using the groundwater flow model to create a capture zone sufficient to contain the groundwater contaminant plume to the extent practicable without drawing contamination from the FMGP or Deyke and Pollard Oil sites. The maximum pumping rates were specified for pump performance to create a larger capture zone, if needed, and still have a high enough air stripping removal efficiency to meet the discharge requirements.

The yard piping system consisting of high density polyethylene (HDPE) and Schedule 80 polyvinyl chloride (PVC) pipe is used to convey extracted groundwater from the wells to the GET system building. The treatment system contains the following major components:

- Equalization (EQ) tank
- Transfer pumps
- Chemical metering pump
- Packed column air stripper
- Acid/disinfectant recirculation pump

- Chemical (biodispersant) storage
- Air stripper blower and heater

A polyphosphate-based sequestrant, MCT 4120 by Analytix, was initially added before the EQ tank to reduce hardness scale formation in the packed column air stripper. Extensive biological and iron fouling of the air stripper packing occurred in October 2004. Because acid washing of the packing material was not successful, replacement of the packing was required. A polymeric nonionic dispersant, SK-2000 by Chemtreat, replaced the polyphosphate-based sequestrant in 2005. The polydispersant is nontoxic, food-grade, and National Sanitation Foundation (NSF)-certified for drinking water applications. In November 2008 a new NSF-certified surfactant/dispersant, AQ-5010, manufactured by Aqua-Pure, Inc was pilot-tested. Pilot-testing was successful and the city of Columbus started using AQ-5010 in April 2009.

The GET system discharges treated water to either the city's south water treatment plant or to the storm sewer if potable demand is exceeded. The city storm sewer connection runs from the treatment building by gravity flow to the existing storm sewer line on 27th Avenue. The treatment plant supply line connection was made by connecting to an existing 12-inch diameter cast iron pipe on the south side of the GET system treatment building. The treated water from the GET system is blended with other water pumped from the southern municipal well field. The treatment plant adds fluoride, chlorinates the treated water, and adds a metals sequestrant for copper control before water is routed to the city distribution system.

The GET system is equipped with an Allen-Bradley programmable logic controller (PLC) interfaced with a desktop personnel computer (PC). The on-site operator and remote users can control and monitor all automated processes in the system from the PC. The PC is connected to the Ethernet local area network (LAN) switch in the GET system building control panel. An Ethernet LAN switch at the extraction well control panel is connected to the building control panel via a fiber optic line. There is one SCADA remote telemetry unit (RTU) located in the building control panel. This unit connects serially to the PLC providing a communication link with the city SCADA system.

1.4 REMEDIAL SYSTEM EVALUATION

EPA headquarters initiated a remedial system evaluation by an outside consultant, GeoTrans in 2009. The recommendations made in the report for the GET system are summarized below (GeoTrans, 2010). Recommendations from the report concerning the AS/SVE system are summarized in the AS/SVE annual performance report.

1.4.1 Recommendations to Improve Effectiveness

GeoTrans noted that EW-04 is not pulling in contaminated water. Further, pumping of EW-04 could increase the possibility of contaminants escaping capture to the east of EW-03. It was recommended that use of EW-04 be terminated, and the pumping rate increased at EW-03 to better capture all contaminants. Well capacity of EW-03 would need to be adequate to support an increased pumping rate to maintain the water level above the top of the screen. If the

increased pumping rate in EW-03 causes polycyclic aromatic hydrocarbons (PAHs) to be pulled into the GET system from adjacent sites, then a pre-treatment unit with granular activated carbon (GAC) could be installed to treat water from this well before it is combined with other wells.

1.4.2 Recommendations for Technical Improvement

- A comparison of actual versus observed conditions suggests that the existing model does not accurately represent the flow system under current pumping conditions. It is recommended that re-calibration of the model should be performed including a comparison of simulated versus observed drawdown over time caused by pumping at specific extraction wells. The ability of the model to accurately predict capture depends on the ability of the model to predict drawdown due to pumping.

- Continually increasing concentrations in MW-202 and MW-203 indicate that high concentrations may exist to the east of these well pairs. It is recommended that new monitoring wells be installed to monitor capture of the easternmost edge of the plume. This includes points to the northeast and southeast of MW-202 and MW-203 as well.

- The specific capacity of the extraction wells should be tracked. A decline in specific capacity is an indication of potential well fouling and can serve as a performance indicator for the extraction wells

- The extraction well pumps (totaling 90 horsepower) contribute to the overall electricity usage of the GET system. The pumps are currently throttled by a manual valve to reduce flow. It was recommended to install variable frequency drives (VFDs) to reduce electrical usage.

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2.0 SYSTEM PERFORMANCE

This section presents a discussion of GET system performance from January 2009 through December 2009 including routine maintenance conducted, nonroutine maintenance performed, a summary of system operation, pumping rates, hydraulic capture of contaminated groundwater, and effluent water quality. Previous GET system performance evaluations are discussed in the following reports.

- **Startup - July 2005** - *Groundwater Extraction and Treatment (GET) System Performance Summary Report, 10th Street OU2 Superfund Site* (CDM, 2005e)
- **August 2005 - July 2006** - *Groundwater Extraction and Treatment (GET) System Performance Summary Report, 10th Street OU2 Superfund Site* (HGL, 2006d)
- **August 2006 - July 2007** - *Groundwater Extraction and Treatment (GET) System Performance Summary Report, 10th Street OU2 Superfund Site* (HGL, 2008)
- **August 2007 – December 2008** – *2008 Groundwater Extraction and Treatment (GET) System Performance Summary Report, 10th Street OU2 Superfund Site* (HGL, 2009a)

2.1 ROUTINE MAINTENANCE

The GET system is operated on a continuous basis, with the exception of short-term shutdowns attributed to scheduled maintenance, power outages, or control system alarm conditions. Maintenance events include acid washings, disinfection, and servicing equipment. O&M of the GET system occurs during weekly visits by a system operator. A checklist is used by city operators to guide and document various operational parameters including:

- Extraction well flow rates
- Treated water discharge flow rate (to storm sewer or city)
- Chemical (biodispersant) injection rate
- Water levels in the EQ tank and air stripper sump
- Transfer pump oil levels
- Transfer pump speeds
- Differential pressures across the air stripper fan and filter housing
- Treated water effluent pH
- Treated water effluent turbidity

Completed checklists for this period are provided in Appendix A.

During the weekly visit, operational adjustments and preventative maintenance activities are performed as needed. The subsections that follow discuss the typical operating parameters and maintenance items associated with the various components of the GET system.

Visual inspection and performance-related data such as the differential pressure across the air stripper fan are used to gauge condition of the air stripper packing media. When visual inspection and/or performance-related data indicate that the air stripper packing media is becoming fouled, the system is taken offline and an acid wash of the packing media is conducted. Generally, visual inspections indicate when an acid wash is required before performance-related data indicate that one is needed. Acid washings of the air stripper packing media were conducted in February, June, and October 2009. The acid wash procedure is discussed below.

- Air stripper packing media is acid washed every three months or as warranted by visual inspection.
- 400 gallons of water are pumped to the air stripper sump and 330 gallons of 30 percent hydrochloric acid (HCl) is added to obtain a 15 percent acid solution in the air stripper.
- Pump P-3 is used to re-circulate the solution at 700 gpm for three hours; a pH of below 1.0 standard unit (SU) is maintained during this time.
- After three hours, the packing media is inspected to ensure that cleaning is complete.
- The acid solution is transferred into two holding tanks then pumped into a batch mixer (300 gallons at a time) where it is mixed with a 50 percent sodium hydroxide solution to raise the pH to between 6.5 and 9.0. The neutralized solution is discharged to the sanitary sewer.
- The equalization tank is drained and power washed.
- The equalization tank and air stripper are both disinfected using 12.5 percent liquid sodium hypochlorite. The solution is recirculated using pumps P-1 and P-2, and maintained at 200 parts per million (ppm) free chlorine during the recirculation process. After two hours the solution is neutralized to less than 1.0 ppm using sodium metabisulfite liquid.
- The plant is then restarted and the water is discharged to the storm sewer.
- Two bacterial water samples are taken (24 hours apart) and sent to the NDHHS laboratory. When sample results are verified nondetect, the plant is returned to normal operation.

During the week of July 19 through 25, 2009, annual extraction well maintenance was performed. During the annual maintenance event, each extraction well pump is pulled and

inspected for bacterial accumulation ("slime") as extraction wells may be subject to bacterial activity that causes biofouling. The wells are chemically treated as needed using an acid solution to remove buildup. This process is performed by an outside subcontractor and includes the following activities:

- Removing the pumps, discharge piping, sounding tubes, and transducers from each well.
- Dismantling and inspecting each pump for wear, damage, and need for repair and/or routine maintenance.
- Cleaning pumps and performing maintenance as needed.
- Replacing any corroded steel discharge pipe fittings.
- Disinfecting the well pumps and discharge piping.
- Performing a chemical treatment process at each well, using 1,000 gallons of solution (220 gallons of acid, 15 gallons of QC21, and water). QC21 is a Layne Christensen Company product consisting of organic acid with chelating agents and surfactant used to control mineral precipitants, metal oxides, and organic biomass deposits in well screens and gravel packs.
- Neutralizing wastewater from the chemical treatment process.
- Shock chlorinating each extraction well before placing the well back into service.
- Reinstalling pumps, discharge piping, and sounding tubes after the chemical treatment process is completed.

After the annual maintenance, samples from the extraction wells are sent to the NDHHS laboratory for bacterial analysis to verify that the system was adequately disinfected.

2.2 NONROUTINE MAINTENANCE

Nonroutine maintenance conducted this period consisted of replacing valves, repairing flow meters, repairing a sanitary sewer line that ran through the storm sewer line where the GET system discharges, and relocating the GET system influent water line north of the railroad tracks. The following subsections detail the nonroutine maintenance conducted on the GET system.

2.2.1 Treatment System

Piping and Valves

A portion of the GET system yard piping that runs along the UPRR corridor was relocated in response to near- and long-term construction and planning by UPRR that included possible addition of tracks on the south side of the current rail line. The GET system yard piping and

fiber optic communication lines were installed along 12th Street and crossed beneath the UPRR railroad tracks between 24th and 25th Avenues, continued west along the south side of the tracks to a location between 27th and 28th Avenues, then turned south to connect to the GET treatment system. The piping run was revised to continue north along city of Columbus property to an area directly north of the GET system, and a new crossing was bored beneath the tracks to connect to the north-south piping run between 27th and 28th Avenues. The influent water line running along the south side of the railroad tracks was abandoned, and the new pipe line and fiber optic lines were tied into the existing alignment. This work was completed in April 2009. The abandoned and revised alignments are shown on Figure 1.4.

Flow Meters

The flow meter from extraction well EW-04 was sent to the manufacturer for repair during the fourth quarter of 2008. EW-04 remained down through January and the first week of February 2009. Due to a subsequent acid washing and the relocation of the influent water pipe line, EW-04 was not brought back online until March 26, 2009. However, the flow meter remained down for the rest of the year.

Pumps and Blowers

There was no nonroutine maintenance performed on any pumps in 2009. The blower filters were changed on May 11, August 10, and October 10, 2009. No other nonroutine maintenance was noted for this period.

Air Stripper

On December 27, 2009, the GET system was shut down to repair the acid recirculation line. Ice built up on top of the stripper, then fell and severed the acid recirculation line. The system was down for approximately three weeks. On January 18, 2010, the City of Columbus temporarily fixed the acid recirculation line with a flange and a cover to allow normal operation of the system. On March 9, 2010, the piping was permanently fixed, just before the first acid wash of 2010.

Chemical Treatment

In 2008, Columbus city officials became concerned with product quality control and the cost of the SK-2000 biodispersant and sought a replacement product. In November 2008 a new NSF-certified surfactant/dispersant, AQ-5010, manufactured by Aqua-Pure, Inc. was pilot-tested. Pilot-testing was successful and a full-scale change to AQ-5010 occurred in April 2009 after the remaining SK-2000 supply was expended. The Material Safety Data Sheet (MSDS) for AQ-5010 is provided in Appendix C.

Other

On June 1st 2009 the GET system was down for work performed on a sanitary sewer line located at 4th Street and 23rd Avenue. Repairs were needed for this sanitary sewer that ran through the storm sewer used for GET system discharge. Simultaneously, an acid wash was performed on the GET system. The project was to run from 7 to 10 days, but due to large amounts of rain it lasted until July 1, 2009 resulting in 4 weeks of downtime.

2.2.2 Extraction Wells

EW-04 was down from July 19, 2009, through July 25, 2009 for annual maintenance. After the maintenance was performed samples were sent for bacteria analysis to ensure proper disinfection, and EW-04 did not pass. The well was disinfected a second time, and follow-up sampling indicated the well was permissible for use. EW-04 was brought back online August 28, 2009.

2.2.3 Programmable Logic Controller System

In July 2009, Industrial Control Systems, Inc. installed a 30-minute timer relay to allow the system to send water to the city within 30 minutes of a power outage. Before the time relay was installed the logic programming required 6 hours of discharge to the storm sewer before the city could resume accepting water from the GET system. This change was necessary as three power failures occurred in 2009 on July 23, August 9, and September 2.

2.3 SYSTEM OPERATION

During the reporting period January 1, 2009, through December 31, 2009 groundwater was extracted from extraction wells EW-01R, EW-02C, EW-03, EW-04; and city well W-1. The design and maximum design flow rates for these wells are shown in Table 1.3, along with the average flow rates for the wells during the 2009 operational period. The flow at EW-03 was increased to 230 gpm on November 16, 2009, based on results of groundwater modeling indicating flow at this well could be increased without reversing flow across the FMGP site. The 230 gpm rate was determined to be the maximum flow rate for this well without drawing water below the top of the screen, and flow was increased to this maximum rate per recommendations made in the RSE report. Table 2.1 shows the extraction well top of the screen elevations, static water level, average pumping elevation, and average specific capacity. The top of screen elevations are set points that water should not be drawn below as measured by transducers installed in each well. With the exception of city well W-1, the flow rates from extraction wells EW-01R, EW-02C, EW-03, and EW-04 are electronically recorded at 10-minute intervals. The flow rate for city well W-1 is calculated from the total influent flow rate to the city's south water treatment plant, minus the flow rates recorded from extraction wells EW-01R, EW-02C, EW-03, and EW-04. In 2009, the total average flow rate of the system was 1,579 gpm, an increase from 1,528 gpm in 2008 even though the system was down for significant nonroutine maintenance in 2009 as discussed in Section 2.2.

The RSE completed in 2009 suggested measuring and tracking specific capacity of the extraction wells (see Section 1.4). The specific capacity of each extraction well is determined by dividing the pumping rate by the drawdown at that extraction well (i.e., gpm per foot of drawdown). The benefit of tracking this parameter is that a decline in specific capacity indicates possible well fouling and can serve as an indicator of the need for well rehabilitation. Figure 2.1 shows the specific capacity of the extraction wells during 2009. Static water level (SWL) measurements from MW-16B, MW-31B, and MW-22B were used to assume SWLs at EW-01R, EW-02C, and EW-03, respectively, to determine the amount of drawdown within each extraction well while pumping. (Note: MW-31B is a "C" level well, and therefore was

used to correlate with the "C" level extraction well.) Figure 2.1 indicates specific capacity was relatively constant in EW-01, EW-02C, and EW-03 during 2009 except for a slight increase following the annual well maintenance which would be expected. W-1 does not have a means of measuring the water level in the well, so no specific capacity was determined for this well. Also, the flow meter for EW-04 was inoperable for most of 2009, thus specific capacity was not calculated for EW-04 this period.

The southern municipal well field had the highest production periods during May, July, August, and September 2009. During these months, southern municipal well field produced approximately 68 to 90 million gallons of water per month. The total monthly volume of water pumped to the city's southern water treatment plant and the storm sewer is shown on Figure B-1 in Appendix B. This figure also shows the total volume of water pumped from the northern and southern well fields (the southern municipal well field total is inclusive of the GET system). The monthly production of the GET system shown as operational percentage is provided as Figure B-2 in Appendix B. The system had low production during February, March, and June 2009. The low production during these months was the result of system shutdown for routine and non-routine maintenance described in Section 2.2.

The GET system treated approximately 567 million gallons of water in 2009, which is more than the 550 million gallons of water treated in 2008. Approximately 65 percent of the treated water from the GET system was discharged to the city's southern water treatment plant for reuse during this period. The remaining volume of treated water was discharged to the storm sewer. The GET system removed approximately 112.7 pounds of VOCs from the groundwater during 2009 compared to 107 pounds of VOCs removed in 2008. Table 2.2 presents a summary of groundwater treatment operations during the 2009 time period. Table 2.3 presents a monthly breakdown of the influent and effluent flow volume through the treatment system. Table 2.4 presents calculations of mass of VOCs removed by the GET system in 2009 based on VOC concentrations in the influent to and effluent from the air stripper and the total flow.

2.4 ISCO INJECTIONS

EPA procured and awarded a subcontract to Lee and Ryan Environmental Consulting, Inc. (Lee and Ryan) to implement the remedial design completed under Task Order 0009 for ISCO injections within the groundwater plume upgradient of the GET system extraction wells. The ISCO injection locations are summarized in Table 1.2. ISCO injections were completed in the following areas in 2009:

- OHM Source Area
- 20th Street and 22nd Avenue
- 19th Street and 22nd Avenue
- 9th Street south of Jackson Services
- Parking lot east of Liberty Cleaners on 10th Street

Injections at OHM are discussed in the OHM quarterly and annual reports. ISCO treatment conducted in 2009 within the downgradient groundwater plume is discussed below.

The fourth round of plume injections was conducted between April and May of 2009. These injections were completed in the Liberty Cleaners parking lot and in 20th Street near the intersection with 22nd Avenue as follows:

- Liberty Cleaners parking lot on 10th Street – 20 points
- Intersection of 20th Street and 22nd Avenue – 52 points

A solution of 1.5 percent $KMnO_4$ was continuously injected in two intervals between 15 and 40 feet bgs and between 40 and 65 feet bgs. The injections were spaced at approximate 10-foot intervals (Lee and Ryan, 2009).

The fifth round of plume injections was conducted between July and August of 2009. These injections were completed in 19th Street near the intersection with 22nd Avenue and in 9th Street south of Jackson Services as follows:

- Intersection of 19th Street and 22nd Avenue – 39 points
- 9th Street south of Jackson Services – 15 points

A solution of 1.5 percent $KMnO_4$ was continuously injected in two intervals between 15 and 40 feet bgs and between 40 and 65 feet bgs. The injections were spaced at approximate 10-foot intervals (Lee and Ryan, 2010).

An ISCO Remedial Evaluation Report will be prepared in 2010 that will summarize all of the ISCO injection work at the site and provide an evaluation of the effectiveness of this treatment in reducing contaminant mass in the groundwater.

2.5 HYDRAULIC CONTAINMENT OF CONTAMINATED GROUNDWATER

During the initial startup of the system, the groundwater elevations at selected monitoring wells were recorded to evaluate the capture zone of the extraction wells. These measurements were used to recalibrate the groundwater model and generate an estimate of the capture zone for the GET system. Evaluation of the transducer data collected during system startup is reported in the *Technical Memorandum for Remediation System Startup Monitoring, 10th Street OU2 Superfund Site, Columbus, Nebraska* (CDM, 2005a).

Initial startup testing and determination of hydraulic containment of the contaminant plume was completed in April and May 2004. The system was operating at approximately 1,250 gpm from April 2004 to December 2004 with extraction wells EW-01R, EW-02C, EW-03, and municipal well W-1. During the design and construction of the interim remedy, the city had reduced the use of the southern municipal well field because of increasing contaminant concentrations, thereby allowing groundwater to resume its natural southeasterly direction of flow. As a result,

the migration path of the VOC contaminant plume turned easterly and outside of the capture zone for extraction well EW-03, as predicted by the groundwater model before construction.

Results of the first model recalibration effort with an estimated pumping rate for an additional extraction well, EW-04, are reported in the *Groundwater Model Calibration Update Memorandum, 10th Street OU2 Superfund Site, Columbus, Nebraska* (CDM, 2005b). Startup monitoring of the capture zone produced by the GET system indicated that a possible gap in capture between extraction wells EW-01R and EW-03 was occurring (CDM, 2005b). In December 2004, the flow rate of extraction well EW-03 was increased from 150 gpm to 200 gpm to close this gap.

Results of the model recalibration effort performed in 2006 are reported in the *Technical Memorandum for Groundwater Model Calibration Update, 10th Street OU2 Superfund Site, Columbus, Nebraska* (HGL, 2006c). An additional extraction well, EW-04, was installed in July 2005. Extraction well EW-04 has a design pumping rate of 150 gpm with a maximum pumping rate of 180 gpm. The final location of extraction well EW-04 was moved one block east of the planned location after the discovery of the Deyke and Pollard Oil sites. Extraction well EW-04 resulted in capture of the easterly portion of the contaminant plume and a total system flow rate of approximately 1,400 gpm; however, the southeastern portion of the contaminant plume was allowed to migrate south between extraction wells EW-03 and EW-04 to avoid capturing the hydrocarbon-contaminated plume from the FMGP and Deyke and Pollard Oil sites.

The Deyke and Pollard oil lease properties are located on 13th Street and 19th Avenue (Deyke) and 13th Street and 18th Avenue (Pollard). This site is maintained by Burlington Northern Santa Fe railroad and all wells were sampled by RDG Geoscience & Engineering, Inc. The results are worth noting because the wells are in proximity to EW-03, EW-04, and MW-40 at the 10th Street Site. There are 29 monitoring wells and 4 SVE wells on the Deyke and Pollard oil lease properties. During 2009, no free product was observed in the monitoring wells. Free product was observed in SVE-2 and SVE-3 at a maximum thickness of 0.60 feet. Contaminant concentrations have been flat to trending downward over the last two quarters. During the 4th quarter of 2009, benzene concentrations ranged from less than 1 μg/L to 4,870 μg/L (RDG, 2009).

Results of the model recalibration effort performed in 2007 to assess plume capture and predict overall groundwater cleanup times are reported in the *Technical Memorandum for Groundwater Model Calibration Update, 10th Street OU2 Superfund Site, Columbus, Nebraska* (HGL, 2007).

The groundwater model was updated in 2009 using the 2008 SWL and contaminant data (HGL, 2009a Appendix D). The model report discussed lack of capture of the groundwater plume between extraction wells EW-03 and EW-04 as the system was intentionally operated to not capture groundwater containing heavy fuel oil contaminants associated with the Deyke and Pollard Oil sites. The projected cleanup times derived from this most recent model update are discussed in Section 2.8.

Twelve new monitoring wells will be installed in March and April 2010 in the southeast portion of the site. After the new wells are installed, pressure transducers will be installed in selected

observation wells. Subsequently, a pump test will be performed using current pumping rates at EW-03 and EW-04. These data will be used to recalibrate the groundwater flow model and reassess hydraulic gradients and plume migration in this portion of the site in response to RSE comments summarized in Section 1.4.

2.6 GET SYSTEM COMPLIANCE AND PERFORMANCE SAMPLING

VOC monitoring of the influent and effluent of the GET system has been conducted since the system began operation in February 2004. The GET system is sampled quarterly, at a minimum, for compliance with NDHSS requirements. As of January 2007, NPDES reporting for the GET system was no longer required by NDEQ since drinking water limits have consistently been met. Samples have also been collected at the system influent, post-chemical addition, and effluent points in the GET system. These samples quantify the percent removal of VOCs, metals and hardness across the air stripper and are used as an indicator of how well chemical additives are inhibiting scale formation. A comprehensive review of previous system influent, post-chemical addition, and effluent sample results is presented in the *Interim Remedial Action Report, 10th Street OU2 Superfund Site, Columbus, Nebraska* (CDM, 2005d). Table 2.5 indicates removal efficiency for PCE, TCE, trans-1,2-DCE, and vinyl chloride was 100 percent in 2009. Removal efficiency for cis-1,2-DCE was greater than 95 percent.

2.6.1 NDHSS Drinking Water Compliance Sampling

The Nebraska drinking water standards are the basis for the effluent limits established by NDHSS. Treatment water standards are shown in Table 1.1. VOC samples are collected on a quarterly basis from the treated water effluent and potable distribution system for analysis by both the EPA laboratory and NDHSS laboratory. NDHSS limits for maximum concentrations of contaminants in treated water effluent discharged from the site are 5 μg/L for PCE and TCE; 70 μg/L for cis-1,2-DCE; 100 μg/L for trans-1,2-DCE; and 2 μg/L for vinyl chloride.

PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride results for samples collected from the GET system influent, effluent, and city distribution system in 2009 are summarized in Table 2.5. All effluent and distribution system sample results were below NDHSS limits.

2.6.2 In-Line Effluent Readings

Turbidity and pH of treated water transferred to the city's southern water treatment plant is monitored continuously by real-time, in-line meters. For water discharged to the storm sewer, pH and turbidity readings are taken manually on a periodic basis. The NPDES permit for the site stipulates that the maximum pH for the treated water effluent discharge from the site be no greater than 9. A turbidity standard was not established in the NPDES permit. NDHSS drinking water standards are 6.5 to 8.5 SU for pH and less than 1.0 nephelometric turbidity unit (NTU) for turbidity. Up to 5 NTUs are permissible under NDHSS standards if the operator can demonstrate that the higher turbidity does not do any of the following: (a) interfere with disinfection, (b) prevent maintenance of an effective disinfectant agent throughout the distribution system, or (c) interfere with microbiological determinations. Table 2.6 provides the weekly pH and turbidity measurements in 2009. Turbidity levels fluctuated from 0.10 NTU to 2.15 NTU

measures residual chlorine in the water distribution system, and turbidity levels greater than 1 NTU have not interfered with appropriate disinfection of the water supply.

2.7 GROUNDWATER CONTAMINANT CONCENTRATIONS AND PLUME CONFIGURATION

Groundwater samples were collected quarterly from sitewide groundwater monitoring wells (MWs). A summary of the analytical results between the October 2008 and October 2009 sampling events is provided in Table 2.7. Plume maps depicting PCE, TCE and cis-1,2-DCE concentrations in the "A" level, "B" level and "C" level aquifers were generated each quarter and presented in quarterly reports. The plume maps generated using the October 2008 data are provided as Figures 2.2 through 2.9. Those generated using the October 2009 data are provided as Figures 2.10 through 2.17 as originally presented in the *October 2009 GET System Quarterly Report, 10th Street OU2 Superfund Site, Columbus Nebraska* (HGL, 2009b).Details of the groundwater contamination at OHM are discussed in the AS/SVE report each quarter and in the *2009 AS/SVE Annual Performance Report* (HGL, 2010).

A trend analysis was completed to assess changes in contaminant concentrations in each aquifer. Data from sitewide municipal and monitoring wells were compiled into graphs depicting changes in PCE, TCE, and cis-1,2-DCE concentrations over time (Appendix D). In general, the municipal wells were below the MCLs and did not exhibit significant change over the past year. Cis-1,2-DCE and PCE were stable and below MCL concentrations in the GET system influent. TCE concentrations were also stable during the year in the GET system influent, but above the MCL of 5 µg/L. Contaminant concentrations in the extraction wells were relatively consistent except EW-04. The TCE and cis-1,2-DCE concentrations in extraction well EW-04 spiked above the MCL in April 2009 but returned to previous levels in October 2009. The April 2009 data are believed to be erroneous due to sample labeling error in the field.

Most monitoring well locations had stable or slightly decreasing concentrations of each contaminant. However, some locations exhibited significant changes in contaminant concentrations. The highest concentrations and trends are noted. The highest concentrations of PCE were reported in MW-18B and MW-18C. Both locations had concentrations greater than 80 µg/L and exhibited decreasing trends. The highest concentrations of TCE were reported in MW-2B and MW-5B. Both locations had concentrations that ranged from 200 to 300 µg/L for most of the year. Monitoring well MW-2B exhibited a decreasing trend of TCE during most of the year but spiked up to 280 µg/L in October. Monitoring well MW-5B had a decreasing trend of TCE during most of the year but spiked up to 370 µg/L in October. Increases in TCE and cis-1,2-DCE concentrations were noted in October 2009 in well MW-4A.

In October 2009, detections of cis-1,2-DCE were noted for the first time in background monitoring wells MW-28B and MW-28C at 3.7 and 2.9 µg/L, respectively. These detections appear to be related to the final round of ISCO injections conducted at OHM in September and October 2009 prior to the October 2009 sampling event.

In monitoring well MW-15B, TCE concentrations ranged from 80 to 100 µg/L but trended downward. During the same time period, concentrations of cis-1,2-DCE were steadily increasing and ranged from 320 µg/L to 660 µg/L. The highest concentrations of cis-1,2-DCE was reported

In monitoring well MW-15B, TCE concentrations ranged from 80 to 100 µg/L but trended downward. During the same time period, concentrations of cis-1,2-DCE were steadily increasing and ranged from 320 µg/L to 660 µg/L. The highest concentrations of cis-1,2-DCE was reported in MW-23A. Concentration trends in this well were decreasing most of the year and then increased in October. PCE and TCE were stable and below the MCL at this location.

Increases in TCE and cis-1,2-DCE were noted in the area of the site between and south of extraction wells EW-03 and EW-04. In monitoring well MW-203A, TCE increased above the MCL following a long period in which TCE concentrations were stable and below the MCL. TCE and/or cis-1,2-DCE concentration increases were also seen in wells MW-202B, MW-203B, MW-203C, MW-32A, MW-37A, and MW-39A. In monitoring well MW-3B, TCE concentrations started a decreasing trend following a year of increases. During the same time period, cis-1,2-DCE consistently increased in concentration.

Additional information on contaminant data in 2009 discussed by aquifer level is provided below.

2.7.1 Upper Shallow Aquifer ("A" Level Monitoring Wells)

In the upper shallow aquifer, the PCE plume at the OHM source area decreased in size from October 2008 (Figure 2.2) to October 2009 (Figure 2.10). In October 2008 there were two smaller plumes located south of the railroad tracks at Liberty Cleaners and Jackson Services. These two small plumes have combined, creating a plume that appears to encompass MW-1A, MW-2A, and MW-5A although concentrations are relatively low (5.5 µg/L to 26 µg/L). In October 2008 the highest PCE concentration in the "A" level aquifer was 38 µg/L at MW-24A. In October 2009 PCE was nondetect in MW-24A, and the highest PCE concentration was 26 µg/L at MW-1A. This is an increase from a concentration of 13 µg/L at this well in October 2008.

The overall areal extent of the TCE plume has remained relatively unchanged from the 2008 reporting period. However, the current configuration of the TCE plume illustrates changes caused by ISCO injections along 20th Street, 16th Street, and at the OHM source area (Figure 2.11). Four separate plumes were derived from data and drawn to illustrate the extent of TCE concentrations at or above the MCL of 5 µg/L. The configuration of and the data trends within the four TCE plumes observed from data collected this reporting period are summarized below:

- The northern plume at the OHM source area appears to be isolated to the one-block area around the building.

- The second plume starts on 22nd Street and 25th Avenue and extends southeast two blocks to 20th Street.

- The third plume is larger than the previous two and extends from 19th Street and 24th Avenue southeast to 15th Street and 21st Avenue. Concentrations within the third plume have decreased slightly from October 2008.

- The fourth plume is the largest, extending from near 8th Street and 27th Avenue, east-northeast to 10th Street and 19th Avenue. The highest TCE concentration in the shallow "A" aquifer in October 2009 was 29 μg/L reported in MW-2A; a decrease from 78 μg/L reported in October 2008.

The cis-1,2-DCE plume consists of a single plume situated in the central portion of the site (Figures 2.4 and 2.12). During this reporting period, the cis-1,2-DCE plume narrowed slightly on the lower west side, and does not encompass EW-03 as it did in October 2008. The northern portion of the plume has migrated about one block southeast, away from the OHM source area. Concentrations of cis-1,2-DCE in MW-26A decreased from 140 μg/L in October 2008 to 48 μg/L in October 2009. In October 2009, the highest cis-1,2-DCE concentration was 540 μg/L at MW-23A; a decrease from 880 μg/L reported in October 2008.

2.7.2 Lower Shallow Aquifer ("B" Level Monitoring Wells)

In the lower shallow aquifer, the extent of PCE contamination is illustrated by one plume centered at MW-18B and a much smaller plume isolated at OHM (Figures 2.5 and 2.13). During this reporting period the PCE concentration at MW-18B declined from 200 μg/L in October 2008 to 130 μg/L in October 2009.

The TCE plume in the lower shallow aquifer consists of a primary contaminant plume that extends from the central portion of the site southeast to approximately two blocks west of extraction well EW-04 and southwest to the southern municipal well field (Figure 2.14). There are also two smaller isolated plumes located around KV-4 and MW-22B. Neither of these wells exhibited TCE at levels significantly over the MCL. In October 2009, TCE was reported in well KV-4 at 9.4 μg/L and in MW-22B at 8.2 μg/L. TCE concentrations above the MCL are also present at the OHM source area. Between October 2008 and October 2009 the size of the TCE plume did not change significantly. TCE concentrations at most locations have remained relatively unchanged during this period. However, some locations had moderate increases or decreases. The TCE concentration at MW-1B was 110 μg/L in October 2008, whereas in October 2009 TCE in the same monitoring well was nondetect. MW-1B is located in the parking lot east of the Liberty Cleaners. ISCO injections were completed in this area October 14 through 19, 2008. This sample location has been nondetect for TCE since April 2009. During this period, TCE decreased in MW-15B from 130 μg/L in October 2008 to 77 μg/L in October 2009. However, TCE increased at MW-5B from 240 μg/L in October 2008 to 370 μg/L in October 2009.

The cis-1,2-DCE plume in the lower shallow aquifer consists of two separate plumes, one in the northern portion of the site and one in the central portion. The northern plume contracted slightly during the reporting period, and the cis-1,2-DCE concentration in MW-41B decreased from 340 μg/L in October 2008 to 150 μg/L in October 2009. The central plume has not appreciably changed in size during the reporting period, although the plume now extends further to the east and includes MW-15B where the concentration increased from 30 μg/L in 2008 to 110 μg/L in 2009. The "B" level PCE, TCE, and cis-1,2-DCE plume maps generated from the October 2009 data are shown on Figures 2.13, 2.14, and 2.15, respectively.

2.7.3 Middle Aquifer ("C" Level Monitoring Wells)

In the middle aquifer wells ("C" zone), the overall size of the PCE plume has not appreciably changed between October 2008 (Figure 2.8) and October 2009 (Figure 2.16) although the concentrations in the center of the plume have decreased slightly. The PCE concentration in MW-18C decreased from 110 µg/L in October 2008 to 81 µg/L in October 2009, and the concentration at MW-31B decreased from 79 to 77 J µg/L. These were the only wells with PCE detections above the MCL of 5 µg/L.

The concentration of TCE in samples collected from "C" level monitoring wells did not change significantly between the October 2008 (Figure 2.9) and October 2009 (Figure 2.17) sampling events. However the northern portion of this plume was reduced and no longer encompasses MW-23B. The configuration of this plume near extraction well EW-02C illustrates that the extraction well is capturing the leading downgradient edge of impacted groundwater.

No figure was prepared for cis-1,2-DCE because it was not detected above the MCL of 70 µg/L in the middle aquifer this period.

2.7.4 Plume Mass and Volume

Environmental Visualization System (EVS) software was used to assess reductions in contaminant mass and volume as the GET system removes contaminated groundwater at the site. Mass and volume of PCE and TCE in groundwater in October 2009 were determined using EVS to evaluate the current level of impact compared to the previous reporting period.

The results of the mass and volume calculations from October 2007, October 2008, and October 2009 are provided in Table 2.8. In general, the PCE mass and volume decreased across all stated concentration ranges between October 2008 and October 2009. The EVS indicates TCE plume volume has increased at the greater than 5 µg/L and greater than 250 µg/L concentration ranges. The mass of TCE at the greater than 50 µg/L concentration range decreased, while there was an increase across the other concentration ranges for TCE contaminant mass. Mass and volume for cis-1,2-DCE have decreased across all concentration ranges since October 2008.

Mass and volume for TCE greater than 250 µg/L have increased over the past 3 years. This appears to represent changes in the area of Liberty Cleaners and Jackson Services seen on the plume maps where concentrations have been reduced at MW-1B and somewhat reduced at MW-2B, but increases have occurred at MW-5B. Mass and volume of TCE at concentrations above 250 µg/L are still relatively low compared to mass and volume at the lower concentration ranges.

2.8 GROUNDWATER CLEANUP PROJECTIONS

Projections of the future of existing groundwater contaminants at the site and estimates of the time to reach the cleanup levels specified in the ROD (federal MCLs) were last evaluated in April 2009 using the groundwater flow and contaminant model. The October 2008

concentrations were used as the initial condition, and no additional contribution from sources was assumed. Pumping was simulated into the future using the seasonal pumping variations.

Simulation results from groundwater modeling conducted using October 2008 data indicate that PCE concentrations would decrease to below the MCL in the "A" aquifer in 12 years, and in less than 5 years in the "B" aquifer. Concentrations of PCE in the "C" aquifer are simulated to persist for 30 years. Concentrations of TCE are projected to reach cleanup levels in 22 years in the "A" aquifer, 30 years in the "B" aquifer, and more than 50 years in the "C" aquifer. Concentrations of cis-1,2-DCE were also simulated in this analysis, and are projected to reach cleanup levels within 12 years in both the "A" and "B" aquifers. (HGL, 2009a Appendix D)

The groundwater model indicates that after 30 years the plume would be located south of the railroad corridor and not captured by the extraction wells. The plume area between wells EW-03 and EW-04 that is not captured by the GET system would show continued migration of TCE and cis-1,2-DCE above the MCLs to the south. The plume advance is limited by dilution of contaminated groundwater as it mingles with uncontaminated groundwater. The fuel sites located in this area may facilitate degradation of site contaminants, as organic constituents would provide a food source to stimulate naturally occurring bacteria to anaerobically degrade the chlorinated compounds. However, such degradation was not assumed in the cleanup simulations. The C aquifer simulation suggests that some mass will escape the capture system and flow to the southeast, diluting to lower concentrations over time as it migrates. Further model work will be conducted in 2010 to more closely evaluate capture of the groundwater plume in this portion of the site and respond to recommendations made in the RSE report.

2.9 WELL PAD REPLACEMENTS

In August 2009, 50 monitoring well pads were replaced due to deterioration over time. Older 4-inch diameter manways were replaced with 8-inch manways for easier access. A full list of wells that were repaired is included in Table 2.9. During well pad replacement work, monitoring well MW-10A was inadvertently damaged. This well was replaced with well MW-10AR, offset a few feet from the original well. This well will be surveyed in 2010 with the 12 newly installed monitoring wells.

3.0 SUMMARY AND RECOMMENDATIONS

This section presents a summary of the overall operation of the GET system and recommendations for streamlining system operation and maintenance. It also discusses activities that have been completed or are planned in response to the RSE report.

3.1 OPERATION SUMMARY

The GET system has experienced downtime in 2009, but on average was operational 83 percent of the time. System downtime resulted from required routine and non-routine maintenance. Routine maintenance included acid washings, disinfection, and servicing equipment. Nonroutine maintenance included replacing valves, repairing flow meters, addressing PLC communication issues, moving the influent pipeline, repairing a sanitary sewer line, and repairing the acid recirculation line. The GET system treated approximately 567 million gallons of water in 2009. Approximately 65 percent of the treated water from the GET system was discharged to the city's south water treatment plant for reuse during this period. An estimated 113 pounds of VOCs were removed this period.

During this period of performance ISCO injections were completed at the OHM source area and downgradient locations within the contaminant plume. Analytical results of groundwater samples collected within the plume injection areas do not indicate a significant reduction in overall contaminant concentrations. Some localized reductions in the immediate areas of the ISCO injections were observed in the "A" and "B" shallow aquifer levels including MW-1B where the TCE concentration has been reduced from 110 μg/L to nondetect. It is expected that the injections have removed some contaminant mass, and it should be noted that the groundwater model predicted shorter cleanup times using the 2008 monitoring data than the model update prepared using 2007 data.

EVS modeling indicated reductions in mass and volume of PCE and cis-1,2-DCE at all concentration levels in 2009, although increases in mass and volume of TCE were indicated at some concentration levels.

Flow at EW-03 was increased to 230 gpm in November 2009 as recommended in the RSE report, and additional monitoring wells are being installed to monitor advance of the groundwater plume in the southeast portion of the site. Specific capacity of the extraction wells has also been evaluated, and the information is presented in this report. Specific capacity will continue to be monitored to ensure maximum efficiency of the extraction wells.

The system has consistently met both surface water and potable water discharge requirements. Based on quarterly sampling results and city feedback, treated water from the GET system discharged to the city's south water treatment plant has not affected the city's overall water quality.

3.2 RECOMMENDATIONS AND PLANNED FUTURE ACTIONS

Results of previous groundwater flow and contaminant transport modeling show that the current system is achieving plume capture through most of the "C" level aquifer but not in the "A/B" level aquifers due to the capture zone gap between extraction wells EW-03 and EW-04. Because of this gap, the system is not capturing the southeastern lobe of the TCE and cis-1,2-DCE plume. Pumping of these wells is deliberately limited to avoid drawing in petroleum hydrocarbons originating from the adjacent Deyke and Pollard Oil sites that would adversely impact the GET system. Model simulations indicate that the portion of the TCE and cis-1,2-DCE plume that is not captured will dilute to levels below the MCL before reaching the Loup River, which forms the southern boundary of the CICA. Pump testing and groundwater monitoring are planned in the vicinity of EW-03 and EW-04 in 2010. These data, recent quarterly groundwater monitoring data, and water level measurements will be used to recalibrate the groundwater flow model to more closely assess capture in this portion of the site. Groundwater cleanup projections will be determined using the updated model, and the model results will be used to evaluate whether the plume would be expected to migrate outside the CICA. After the modeling work is completed, recommendations will be made regarding the future use of EW-04 or other actions in this portion of the site as suggested in the RSE report.

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Tables

Table 1.1 Summary of Drinking Water and Surface Water Standards

Analyte	Units	Discharge Standards			
		Nebraska Maximum Contaminant Limits[1]	GET System NPDES Discharge Limits[2]	Nebraska Surface Water Discharge Limits[3,4]	
				Acute	Chronic
Tetrachloroethene (PCE)	µg/L	5	5	5,280[B]	88.5[C,E]
Trichloroethene (TCE)	µg/L	5	5	45,000[B]	810[C,E]
cis-1,2-Dichloroethene	µg/L	70	10	NE	NE
trans-1,2-Dichloroethene	µg/L	100	10	NE	140,000[C,E]
1,1-Dichloroethene	µg/L	7	7	NE	32[C,E]
Vinyl Chloride	µg/L	2	2	NE	5,250[C,E]
Chloride	mg/L	250[S]	NE	NE	NE
Sulfate	mg/L	250[S]	NE	NE	NE
Arsenic	µg/L	10[A]	NE	340[D]	16.7[C,E]
Barium	µg/L	2,000	NE	NE	NE
Chromium	µg/L	100	NE	SC	SC
Copper	µg/L	1,300	NE	SC	SC
Iron, Dissolved	µg/L	NE	NE	NE	1,000[C]
Iron, Total	µg/L	300[S]	NE	NE	NE
Lead	µg/L	15	NE	235[D,5]	9.1[F,5]
Manganese	µg/L	50[S]	NE	NE	1,000[C,E]
Nickel	µg/L	NE	NE	SC	SC
Zinc	µg/L	5,000[S]	NE	SC	SC
Total Dissolved Solids	mg/L	500[S]	NE	NE	NE
Turbidity	NTU	1.06	NE	NE[7]	
pH	SU	6.5 to 8.5	9 maximum	6.5 to 9	

A - Arsenic standard lowered to 10 µg/L from 50 µg/L in February 2006.

B - Concentration not to be exceeded at any time.

C - 24-hour average concentration.

D - 1-hour average concentration.

E - Human health criteria at the 10-5 risk level for carcinogens based on the consumption of fish and other aquatic organisms.

F- 4-day concentration.

NE - No standard established.

NPDES - National Pollutant Discharge Elimination System.

NTU- Nephelometric trubidity units.

S - Secondary MCL (SMCL). Nonenforceable standards; established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, odor, and color. These contaminants are not considered to present a risk to human health at the SMCL.

SC - Site-specific or aquatic life use class criteria.

SU - Standard units.

mg/L - Milligrams per liter.

µg/L - Micrograms per liter.

1 - Based on Nebraska Department of Environmental Quality (NDEQ) Regulations, Title 118, Chapter 4.

2 - NPDES permit issued by NDEQ (NE0133019).

3 - Based on NDEQ Regulations, Title 117, Chapter 4.

4 - Surface water discharge limits may change based on NDEQ discharge requirements.

5 - Surface water discharge limits based on water hardness, per NDEQ regulations, Title 117, Chapter 4.

6 - The requirement for turbidity of the treated water shall be as specified in the federal requirements for drinking water, which is 1 NTU as determined by a monthly average. Up to 5 NTUs are permissible if the operator can demonstrate that the higher turbidity does not do any of the following: (a) interfere with disinfection, (b) prevent maintenance of an effective disinfectant agent throughout the distribution system, (c) interfere with microbiological determinations.

7 - NDEQ Regulations, Title 118, Chapter 4 stipulate that to be aesthetically acceptable, waters shall be free from human-induced pollution that causes: (1) noxious odors or (2) floating, suspended, colloidal, or settleable materials that produce objectionable films, colors, turbidity, or deposits.

Table 1.2 Summary of Chemical Oxidant Injection Work

Injection Event	Start	End	Number of Points	Volume per Point (mass $KMnO_4$)	Percent $KMnO_4$ Solution	Injection Depth (feet bgs)
Plume Injections						
Round 1 - 20th Street between 22nd Avenue and 24th Avenue	Jan-07	May-07	68 points	2,200 (385)	2.09	65-50, 50-35, 35-15
Round 2 - 16th Street between 20th Avenue and 22nd Avenue	Aug-07	Sep-07	59 points	2,200 (275)	1.5	65-40, 40-15
Round 3 - Liberty Cleaners Source Area parking lot on 10th Street	Sep-08	Oct-08	20 points (Liberty Cleaners)	2,200 (275)	1.5	65-40, 40-15
Round 3 - 20th Street between 22nd Avenue and 24th Avenue			22 points (20th Street)			
Round 4 - Liberty Cleaners Parking Lot on 10th Street	Apr-09	May-09	20 points (Liberty Cleaners)	2,200 (275)	1.5	65-40, 40-15
Round 4 - 20th Street and 22nd Avenue			52 points (20th Street)			
Round 5 - 19th Street and 22nd Avenue	Jul-09	Aug-09	39 points	10,725 (275)	1.5	65-40, 40-15
Round 5 - 9th Street south of Jackson Services			15 points			

bgs = below ground surface

Table 1.3 GET System Flow Rate

Well	2009 Average Flow	Design Flow	Maximum Design Flow
	GPM		
EW-01R	194	200	240
EW-02C	494	500	600
EW-03	160	150	200
EW-04	150	150	180
W-1	582	400	600
Total	**1,579**	**1,400**	**1,820**

GPM = gallons per minute

Table 2.1 Extraction Well Pumping Information

Well	Screened Interval (ft bgs)	Top of Screen Elevation (ft amsl)	Approximate Static Water Level[1] (ft amsl)	Average Water Level at Well[2] (ft amsl)	Average Specific Capacity (gpm/ft drawdown)
EW-01R	51.5 - 73	1394.5	1431.67	1413.25	8.38
EW-02C	102 - 122	1348.3	1431.86	1410.20	17.74
EW-03	52.5 - 82.5	1392.5	1430.49	1422.46	17.19
EW-04	50.5 - 70.5	1391.2	-	1420.63	N/A[3]

bgs = below ground surface

ft amsl = feet above mean sea level

gpm = gallons per minute

1 - Static water levels were not taken from extraction wells. MW-16B (EW-01R), MW-31B (EW-02C) and MW-22B (EW-03) were used for these data points. All water levels are averaged from 2009 quarterly information.

2 - Average water level determined from water level measurements recorded in the extraction well during 2009.

3 - EW-04 had a malfunctioning flow meter and accurate readings could not be obtained to calculate specific capacity.

Table 2.2 Summary of GET System Operation

Parameter	Units	2009
Calendar days of O&M	Days	365
Percent operational	%	83%
Total volume of groundwater treated	MG	567
Volume of groundwater from EW-01R	MG	70
Volume of groundwater from EW-02C	MG	177
Volume of groundwater from EW-03	MG	57
Volume of groundwater from EW-04	MG	54
Volume of groundwater from city well W-1	MG	209
Volume of treated water discharged to city storm sewer	MG	197
Volume of treated water transferred to city water treatment plant	MG	370
Percent of treated water transferred to city water treatment plant	%	65%
Average daily influent flow rate	GPM	1,579

GPM = gallons per minute

MG = million gallons

Table 2.3 Monthly Breakdown of GET System Operation

Groundwater Treated and Discharged by System (gallons)						
	Operational	Storm Sewer		City Water Treatment Plant		Total Treated
Month	%	Gallons	%	Gallons	%	Gallons
January 2009	100%	28,202,496	43%	38,141,056	57%	66,343,552
February 2009	100%	24,539,968	71%	9,842,944	29%	34,382,912
March 2009	40%	18,214,528	72%	7,170,304	28%	25,384,832
April 2009	87%	21,923,904	40%	32,223,232	60%	54,147,136
May 2009	100%	9,552,512	16%	51,492,864	84%	61,045,376
June 2009	1%	3,712	1%	528,256	99%	531,968
July 2009	87%	6,129,088	12%	43,806,592	88%	49,935,680
August 2009	100%	3,855,744	7%	52,888,064	93%	56,743,808
September 2009	100%	4,708,416	8%	52,009,088	92%	56,717,504
October 2009	93%	24,390,336	44%	30,494,336	56%	54,884,672
November 2009	100%	29,195,392	51%	27,906,688	49%	57,102,080
December 2009	86%	26,484,608	53%	23,606,912	47%	50,091,520
System Total for 2009	**83%**	**197,200,704**	**35%**	**370,110,336**	**65%**	**567,311,040**
System Total 2004 to 2008		**1,562,317,108**	**57%**	**1,158,008,254**	**43%**	**2,720,325,362**
System Total (since startup in April 2004)		**1,759,517,812**	**54%**	**1,528,118,590**	**46%**	**3,287,636,402**

Table 2.4 Estimate of Mass of VOCs Removed

Date Sampled	Removed VOC Contaminant Concentration (µg/L) (Influent - Effluent)							Flow (gallons)	Mass of VOCs Removed (lbs)
	PCE	TCE	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Total*		
Jan-08	0.87	17	0	24	2.30	0	43.67	149,990,464	54.7
Apr-08	0	8.20	0	6.96	0.93	0	16.09	32,140,288	4.30
Jul-08	0	0	0	0	0	0	0	179,755,328	0
Oct-08	0	9.10	0	21	1.70	0	31.60	183,700,416	48.4
Total - 2008								**545,586,496**	**107.4**
Jan-09	0	7.50	0	16	1.50	0	25.16	166,768,320	35
Apr-09	0.60	0.87	0	25	1.90	0	28.17	113,914,880	26.80
Jul-09	0	6.70	0	16	1.50	0	24.57	111,513,024	22.90
Oct-09	0	4.30	0	14	1.20	0	19.94	168,345,984	28
Total - 2009								**560,542,208**	**112.7**

Note: The annual total is a summation of the quarterly results. November and December results are reported in January of the following year.

* = Total of VOC contaminants detected above the method quantitation limit

Table 2.5 Summary of GET System Compliance Sampling

Parameter	Units	Influent	Effluent	Percent Removal	Distribution System[1]	
					EPA	NDHSS
January-09						
PCE	µg/L	0.50 U	0.50 U	100%	0.50 U	0.50 U
TCE	µg/L	**7.50**	0.50 U	100%	0.50 U	0.50 U
1,1-DCE	µg/L	0.50 U	0.50 U	100%	0.50 U	0.50 U
cis-1,2-DCE	µg/L	**17**	**0.84**	95%	0.50 U	0.90 U
trans-1,2-DCE	µg/L	**1.50**	0.50 U	100%	0.50 U	0.50 U
Vinyl Chloride	µg/L	0.50 U	0.50 U	100%	0.50 U	0.50 U
April-09						
PCE	µg/L	**0.60**	0.50 U	100%	0.50 U	0.50 U
TCE	µg/L	**8.70**	0.50 U	100%	0.50 U	**0.50**
1,1-DCE	µg/L	0.50 U	0.50 U	100%	0.50 U	0.50 U
cis-1,2-DCE	µg/L	**26**	**1.20**	95%	0.50 U	**0.60**
trans-1,2-DCE	µg/L	**1.90**	0.50 U	100%	0.50 U	0.50 U
Vinyl Chloride	µg/L	0.50 U	0.50 U	100%	0.50 U	0.50 U
July-09						
PCE	µg/L	0.50 U	0.50 U	100%	0.50 U	0.50 U
TCE	µg/L	**6.70**	0.50 U	100%	0.50 U	0.50 U
1,1-DCE	µg/L	0.50 U	0.50 U	100%	0.50 U	0.50 U
cis-1,2-DCE	µg/L	**17**	**0.63**	96%	0.50 U	0.50 U
trans-1,2-DCE	µg/L	**1.50**	0.50 U	100%	0.50 U	0.50 U
Vinyl Chloride	µg/L	0.50 U	0.50 U	100%	0.50 U	0.50 U
October-09						
PCE	µg/L	0.50 U	0.50 U	100%	0.50 U	0.50 U
TCE	µg/L	**4.30**	0.50 U	100%	0.50 U	0.50 U
1,1-DCE	µg/L	0.50 U	0.50 U	100%	0.50 U	0.50 U
cis-1,2-DCE	µg/L	**15**	**0.56**	96%	12 J	0.50 U
trans-1,2-DCE	µg/L	**1.20**	0.50 U	100%	0.50 U	0.50 U
Vinyl Chloride	µg/L	0.50 U	0.50 U	100%	0.50 U	0.50 U

Bold and Shaded = Results exceeds the MCL

Bold = detected result

µg/L = micrograms per liter

U = Not detected above stated reporting limit

[1] Collected at the city municipal water plant from blended production well water and treatment system effluent following potable disinfection.

Table 2.6 Turbidity and pH Readings

Week Start	Week End	Discharge to City [1]	
		pH	Turbidity
		SU	NTU
1/1/2009	1/3/2009	7.07	1.96
1/4/2009	1/10/2009	7.03	1.93
1/11/2009	1/17/2009	7.08	1.97
1/18/2009	1/24/2009	7.08	1.94
1/25/2009	1/31/2009	7.08	1.98
2/1/2009	2/7/2009	7.08	1.99
2/8/2009	2/14/2009	7.07	1.99
2/15/2009	2/21/2009	NR	NR
2/22/2009	2/28/2009	NR	NR
3/1/2009	3/7/2009	NR	NR
3/8/2009	3/14/2009	NR	NR
3/15/2009	3/21/2009	NR	NR
3/22/2009	3/28/2009	6.86	1.93
3/29/2009	4/4/2009	7.04	1.93
4/5/2009	4/11/2009	7.00	1.94
4/12/2009	4/18/2009	7.06	1.92
4/19/2009	4/25/2009	7.06	1.41
4/26/2009	5/2/2009	7.06	1.77
5/3/2009	5/9/2009	7.06	2.15
5/10/2009	5/16/2009	7.06	1.85
5/17/2009	5/23/2009	7.06	1.06
5/24/2009	5/30/2009	7.06	0.50
5/31/2009	6/6/2009	7.07	0.35
6/7/2009	6/13/2009	NR	NR
6/14/2009	6/20/2009	NR	NR
6/21/2009	6/27/2009	NR	NR
6/28/2009	7/4/2009	NR	NR
7/5/2009	7/11/2009	6.93	0.13
7/12/2009	7/18/2009	7.03	0.13
7/19/2009	7/25/2009	7.06	0.14
7/26/2009	8/1/2009	7.07	0.19
8/2/2009	8/8/2009	7.06	0.19
8/9/2009	8/15/2009	7.04	0.16
8/16/2009	8/22/2009	7.05	0.16
8/23/2009	8/29/2009	NR	NR
8/30/2009	9/5/2009	7.04	0.13
9/6/2009	9/12/2009	7.04	0.13
9/13/2009	9/19/2009	7.04	0.13
9/20/2009	9/26/2009	7.05	0.13
9/27/2009	10/3/2009	7.05	0.10
10/4/2009	10/10/2009	7.06	0.10
10/11/2009	10/17/2009	7.06	0.10
10/18/2009	10/24/2009	6.73	0.52
10/25/2009	10/31/2009	6.90	0.96
11/1/2009	11/7/2009	7.04	0.95

[1] = Measured from inline pH and turbidity meters on discharge line to the city municipal water plant.

NR = Not recorded or not discharging

NTU = nephelometric turbidity units

SU = Standard units

Table 2.6 Turbidity and pH Readings (Continued)

Week Start	Week End	Discharge to City [1]	
		pH	Turbidity
		SU	NTU
11/8/2009	11/14/2009	7.07	0.94
11/15/2009	11/21/2009	7.07	0.93
11/22/2009	11/28/2009	7.07	0.92
11/29/2009	12/5/2009	7.05	0.92
12/6/2009	12/12/2009	7.06	0.97
12/13/2009	12/19/2009	7.06	1.01
12/20/2009	12/26/2009	7.06	1.02
12/27/2009	12/31/2009	7.06	1.02

[1] = Measured from inline pH and turbidity meters on discharge line to the city municipal water plant.

NR = Not recorded or not discharging

NTU = nephelometric turbidity units

SU = Standard units

Table 2.7 Quarterly Monitoring Sample Results

Sample Location	Contaminant	Contaminant Concentrations in Monitoring Wells, results in µg/L									
		October 2008		January 2009		April 2009		July 2009		October 2009	
MW-1A	PCE	**13**		**32**		**31**		**31**		**26**	J
	TCE	**10**		**3.7**	J	**11**		**6.2**		**17**	
	cis-1,2-DCE	**24**		**3.7**	UJ	**12**		**6**		**16**	
MW-1B	PCE	0.5		0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**110**		**180**		0.5	U	0.5	U	0.5	U
	cis-1,2-DCE	**150**		**92**		0.5	U		R	0.5	U
MW-2A	PCE	0.5	U	**0.6**		**1.4**		**1.4**		**5.5**	
	TCE	**78**		**120**		**91**		**15**		**29**	
	cis-1,2-DCE	**41**		**49**		**52**		**20**		**43**	
MW-2B	PCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**320**		**290**		**210**		**160**		**280**	
	cis-1,2-DCE	**55**		**90**		**120**		**26**		**120**	
MW-2C	PCE	0.5	U		NS		NS		NS	**0.54**	
	TCE	0.5	U		NS		NS		NS	**1.3**	
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-3A	PCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**27**		**18**		**20**		**14**		**13**	
	cis-1,2-DCE	**14**		**9.8**		**16**		**9.3**		**11**	
MW-3B	PCE	**3.5**		**3.9**		**3.9**		**4**		**3.4**	
	TCE	**6.3**		**6.4**		**5.9**		**9**		**7.2**	
	cis-1,2-DCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
MW-3C/CR	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-4A	PCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**3.7**		**3.5**		**2.2**		**1.6**		**11**	
	cis-1,2-DCE	**2.1**		**1.9**		**1.8**		**1.2**	J	**6.5**	
MW-4B	PCE	0.5	U	0.5	U	**5**	U	0.5	U	0.5	U
	TCE	**0.9**		**1.1**		**2.6**		**7.3**		**4.6**	
	cis-1,2-DCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
MW-5A	PCE	**6.4**		**5.3**		**5.6**		**3.4**		**5.6**	
	TCE	**39**		**35**		**40**		**14**		**20**	
	cis-1,2-DCE	**18**		**11**		**11**		**3.3**		**15**	J
MW-5B	PCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**240**		**260**		**200**		**130**		**370**	
	cis-1,2-DCE	**11**		**12**		**14**	J	**9.5**		**30**	
MW-6A	PCE	**0.68**		**0.62**		0.5	U		NS	0.5	U
	TCE	0.5	U	0.5	U	0.5	U		NS	0.5	U
	cis-1,2-DCE	0.5	U	0.5	U	0.5	U		NS	0.5	U
MW-6B	PCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**10**		**9**		**11**		**4.9**		**10**	
	cis-1,2-DCE	**0.64**		**0.67**		0.5	U	0.5	U	**0.73**	
MW-6C	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-7A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-7B	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U

Bold and shaded = results exceeds the MCL.

* MW-23A and 23B were switched in the field. The correct data is in the table.

J = The identification of the analyte is acceptable; the reported value is an estimate.

NS = Not sampled

U = The analyte was not detected at or above the reporting limit.

UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Table 2.7 Quarterly Monitoring Sample Results (Continued)

Sample		Contaminant Concentrations in Monitoring Wells, results in µg/L									
Location	Contaminant	October 2008		January 2009		April 2009		July 2009		October 2009	
MW-8A	PCE	0.5	U	**5.2**		**5.1**		**1.3**		**3**	
	TCE	**3.2**		**18**		**16**		**4.1**		**13**	
	cis-1,2-DCE	**1.8**		**2.7**		**3.4**		**1.3**		**3.2**	
MW-8B	PCE	**4.7**		**4**		**2.4**		0.5	U	0.5	U
	TCE	**130**		**140**		**120**		**62**		**100**	
	cis-1,2-DCE	**6.1**		**5**		**6.8**		**4**		**6.1**	
MW-9A	PCE	**0.73**		**0.51**		**1**	U	0.5	U	**1.3**	
	TCE	**0.97**		**0.88**		**1.3**		**0.76**		**2.8**	
	cis-1,2-DCE	0.5	U	0.5	U	**1**	U	**5**	U	**0.59**	J
MW-9B	PCE	**1.2**		**0.77**		**1**	U	**1.6**		**2.1**	J
	TCE	**17**		**16**		**14**	J	**19**		**27**	
	cis-1,2-DCE	**1.2**	J	**1.4**		**1.1**		**2.3**		**5**	
MW-10A	PCE	0.5	U		NS	0.5	NS		NS	0.5	U
	TCE	0.5	U		NS	**1**	NS		NS	0.5	U
	cis-1,2-DCE	0.5	UJ		NS		NS		NS	0.5	U
MW-10B	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-11A	PCE	**1.8**		**2**		**2**		**1**		**1.9**	
	TCE	0.5	U	0.5	U	**1**	U		U	0.5	U
	cis-1,2-DCE	0.5	U	0.5	U	0.5	U		U	0.5	U
MW-11B	PCE	0.5	U	0.5	U	**1**	U		NS	0.5	U
	TCE	**2.8**		**3.5**		**3.2**			NS	**2.3**	
	cis-1,2-DCE	0.5	U	0.5	U	0.5	U		NS	0.5	U
MW-12A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	**0.96**	
MW-12B	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-12C	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	**0.7**			NS		NS		NS	**5.6**	
MW-13A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	**3.3**			NS		NS		NS	**1.7**	
MW-13B	PCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**13**		**9.7**		**9.2**		**8.8**		**9.5**	
	cis-1,2-DCE	**6.4**		**5**		**5.4**		**5.3**		**4.1**	
MW-13C	PCE	0.5	U	0.5	U	**1**	U		NS	0.5	U
	TCE	**1.6**		**0.82**		**1**	U		NS	**0.58**	
	cis-1,2-DCE	0.5	U	0.5	U	**1**	U		NS	0.5	U
MW-13D	PCE	0.5	U	0.5	U		NS		NS	0.5	U
	TCE	**0.51**		0.5	U		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U	0.5	U		NS		NS	0.5	U
MW-14A	PCE	0.5	U	0.5	U	**1**	U	0.5	U	0.5	U
	TCE	**4.4**		**4**		**3.5**		**1.5**		**2.1**	
	cis-1,2-DCE	**8.3**		**5.2**		**4.1**		**1.7**	J	**2.2**	
MW-14B	PCE	0.5	U		U	**1**	U	0.5	U	0.5	U
	TCE	**3.6**		**1.2**		**1**	U	0.5	U	**1.1**	
	cis-1,2-DCE	**63**		**53**		**58**		**24**		**31**	

Bold and shaded = results exceeds the MCL.

* MW-23A and 23B were switched in the field. The correct data is in the table.

J = The identification of the analyte is acceptable; the reported value is an estimate.

NS = Not sampled

U = The analyte was not detected at or above the reporting limit.

UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Table 2.7 Quarterly Monitoring Sample Results (Continued)

Sample		Contaminant Concentrations in Monitoring Wells, results in µg/L									
Location	Contaminant	October 2008		January 2009		April 2009		July 2009		October 2009	
MW-14C	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-15A	PCE	**1.9**		**1.7**		**1.5**		**1.3**		**1.2**	
	TCE	**23**		**16**		**14**		**12**		**19**	
	cis-1,2-DCE	**6.9**		**4.5**		**4.6**		**3.8**		**8.9**	
MW-15B	PCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**130**		**120**		**100**		**110**		**77**	
	cis-1,2-DCE	**30**		**45**		**57**		**93**		**110**	
MW-16A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	**2.2**			NS		NS		NS	**1.3**	
MW-16B	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	**5.8**			NS		NS		NS	**3.4**	
MW-17A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	**1.9**			NS		NS		NS	**1.3**	
MW-17B	PCE	0.5	U	0.5	U	**1**	U	0.5	U	0.5	U
	TCE	0.5	U	0.5	U	**1**	U	0.5	U	0.5	U
	cis-1,2-DCE	**18**		**11**		**8.8**		**4.7**		**6.3**	
MW-17C	PCE	0.5	U	**0.63**		**1**	U	0.5	U	0.5	U
	TCE	**7.6**		**3.3**	J	**1.9**		**1.7**		**5.5**	
	cis-1,2-DCE	**18**		**20**		**18**		**9.1**		**19**	J
MW-17D	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-18A	PCE	0.5	U	0.5	U	**1**	U	0.5	U	0.5	U
	TCE	**12**		**12**		**5.6**		**3**		**2.9**	
	cis-1,2-DCE	**210**		**190**		**180**		**110**		N/A	R
MW-18B	PCE	**200**		**210**		**180**		**79**		**130**	
	TCE	**43**		**72**		**78**		**55**		**62**	
	cis-1,2-DCE	**4.8**	J	**8.1**		**12**		**8.1**		**13**	
MW-18C	PCE	**110**		**130**		**140**		**74**		**81**	
	TCE	**39**		**58**		**38**		**31**		**38**	
	cis-1,2-DCE	**55**		**33**		**24**		**18**		**28**	
MW-19A	PCE	0.5	U	0.5	U	**1**	U	0.5	U	0.5	U
	TCE	0.5	U	**3.9**		**4.1**		**1.4**		**2.3**	
	cis-1,2-DCE	0.5	U	**6.9**		**13**		**11**	J	**13**	
MW-19B	PCE	0.5	U		NS		NS	0.5	U	0.5	U
	TCE	0.5	U		NS		NS	0.5	U	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS	0.5	U	0.5	U
MW-20A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-20B	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U

Bold and shaded = results exceeds the MCL.

* MW-23A and 23B were switched in the field. The correct data is in the table.

J = The identification of the analyte is acceptable; the reported value is an estimate.

NS = Not sampled

U = The analyte was not detected at or above the reporting limit.

R = Results were rejected by the laboratory due to QA/QC issues.

UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Table 2.7 Quarterly Monitoring Sample Results (Continued)

Sample		Contaminant Concentrations in Monitoring Wells, results in µg/L									
Location	Contaminant	October 2008		January 2009		April 2009		July 2009		October 2009	
MW-21A	PCE	0.5	U	0.5	U	**1**	U		U	0.5	U
	TCE	**26**		**20**		**23**		**11**		**13**	
	cis-1,2-DCE	**28**		**29**		**28**		**14**		**17**	
MW-21B	PCE	0.5	U		NS		NS		NS		U
	TCE	0.5	U		NS		NS		NS	**0.77**	
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-22A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	**0.96**			NS		NS		NS	0.5	U
MW-22B	PCE	0.5	U		NS		NS		NS	**2.3**	
	TCE	0.5	U		NS		NS		NS	**6.2**	
	cis-1,2-DCE	0.5	U		NS		NS		NS	**17**	
MW-22C	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-23A	PCE	10	U	0.5	U	1	U	0.5	U	0.5	UJ
	TCE	10	U	0.5	U	**1.1**		**0.96**		**1.1**	J
	cis-1,2-DCE	**880**		**660***		**500**		**320**		**540**	J
MW-23B	PCE	**0.69**		0.5	U	1	U	0.5	U	0.5	U
	TCE	**8.2**		**3.5***		**3**		**2.7**		**3.3**	
	cis-1,2-DCE	**7.8**		**2.6***		**2.4**		**1.5**		**2.4**	
MW-24A	PCE	**38**		**33**		**32**		**13**		0.5	U
	TCE	**17**		**18**		**16**		**7.5**		**16**	
	cis-1,2-DCE	**5.5**		**4.4**		**4.1**		**2.6**		**19**	
MW-24B	PCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
	TCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
	cis-1,2-DCE	**1.1**		**1.1**		1	U	0.5	U	0.5	U
MW-24C	PCE	**3.3**		**4.2**		**3.1**		0.5		**1.1**	
	TCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
	cis-1,2-DCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
MW-24D	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-25A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-25B	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-26A	PCE	**11**		**18**		**24**		**11**		**13**	
	TCE	**10**		**12**		**9.6**		**13**		**3.6**	
	cis-1,2-DCE	**140**		**130**		**110**		**54**		**48**	J
MW-26B	PCE	**0.51**		**0.84**		1	U	0.5	U	**4.7**	
	TCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
	cis-1,2-DCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
MW-27A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	UJ		NS		NS		NS	0.5	U
MW-27B	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	UJ		NS		NS		NS	0.5	U
MW-28A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U

Bold and shaded = results exceeds the MCL.

* MW-23A and 23B were switched in the field. The correct data is in the table.

J = The identification of the analyte is acceptable; the reported value is an estimate.

NS = Not sampled

U = The analyte was not detected at or above the reporting limit.

UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Table 2.7 Quarterly Monitoring Sample Results (Continued)

Sample		Contaminant Concentrations in Monitoring Wells, results in µg/L									
Location	Contaminant	October 2008		January 2009		April 2009		July 2009		October 2009	
MW-28B	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	**3.7**	
MW-28C	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	**2.9**	
MW-29A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	**0.82**			NS		NS		NS	0.5	U
MW-29B	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	**4**			NS		NS		NS	0.5	U
MW-30A	PCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
	TCE	**2.5**		**1.7**	J	1	U	**4.6**		**10**	
	cis-1,2-DCE	**26**		**33**		**35**		**15**		**16**	J
MW-30B	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-30C	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-31A	PCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
	TCE	**34**		**27**		**25**		**8.1**		**15**	J
	cis-1,2-DCE	**260**		**250**		**180**		**140**		**200**	
MW-31B	PCE	**79**		**80**		**91**		**51**		**77**	J
	TCE	**36**		**52**		**63**		**30**		**62**	J
	cis-1,2-DCE	**11**		**6.6**	J	**9.6**		**5**		**9.4**	
MW-32A	PCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	cis-1,2-DCE	**130**		**98**		**110**		**130**		**110**	
MW-33C	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	**0.54**			NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-34A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-35A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-36A	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-37A	PCE	0.5	U	0.5	U	0.5	U	N/A	R	0.5	U
	TCE	**2.7**		**2.1**		**1.4**		**1.5**	J	**1.6**	
	cis-1,2-DCE	**8.6**		**13**		**10**		**28**		**59**	
MW-38B	PCE	0.5	U	0.5	U	0.5	U		NS	0.5	U
	TCE	**0.77**		**0.98**		0.5	U		NS	**0.74**	
	cis-1,2-DCE	0.5	U	0.5	U	0.5	U		NS	0.5	U
MW-39A	PCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**2.1**		**0.96**		**1.1**		**3**		**2.1**	
	cis-1,2-DCE	**53**		**57**		**54**		**70**		**74**	

Bold and shaded = results exceeds the MCL.

* MW-23A and 23B were switched in the field. The correct data is in the table.

J = The identification of the analyte is acceptable; the reported value is an estimate.

NS = Not sampled

U = The analyte was not detected at or above the reporting limit.

R = Results were rejected by the laboratory due to QA/QC issues.

UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Table 2.7 Quarterly Monitoring Sample Results (Continued)

Sample		Contaminant Concentrations in Monitoring Wells, results in µg/L									
Location	Contaminant	October 2008		January 2009		April 2009		July 2009		October 2009	
MW-40C	PCE	0.5	U		NS		NS		NS	0.5	U
	TCE	0.5	U		NS		NS		NS	0.5	U
	cis-1,2-DCE	0.5	U		NS		NS		NS	0.5	U
MW-41A	PCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
	TCE	**6.1**		**0.97**		**1.2**		**2.2**		**1.3**	
	cis-1,2-DCE	**130**		**99**		**99**		**51**		**73**	
MW-41B	PCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
	TCE	**0.6**		0.5	U	**1.1**		**0.72**		0.5	U
	cis-1,2-DCE	**340**		**310**		**280**		**74**	J	**150**	
MW-42A	PCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
	TCE	**5.2**		**4.6**		**4.1**		**1.8**		**3.4**	
	cis-1,2-DCE	**150**		**130**		**120**		**67**		**110**	
MW-42B	PCE	0.5	U	0.5	U	1	U	0.5	U	0.5	U
	TCE	**1.2**		**1.3**		**1**		0.5	U	**1.1**	
	cis-1,2-DCE	**47**		**35**		**38**		**16**	J	**34**	
KV-4	PCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**73**		**58**		**30**		**16**		**9.4**	
	cis-1,2-DCE	**120**		**140**		**140**		**130**		**130**	
KV-5	PCE	**2.9**			NS	**2.6**		**2**		0.5	U
	TCE	**8.5**			NS	**6.4**		**3.3**		0.5	U
	cis-1,2-DCE	**8.6**			NS	**20**		**3.6**		0.5	U
MW-202A	PCE	**0.61**		**0.95**		**0.91**		**1.2**		**0.81**	
	TCE	**4.5**		**8.5**		**9.4**		**11**		**7.8**	
	cis-1,2-DCE	**21**		**19**		**20**		**16**		**8.8**	
MW-202B	PCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**13**		**8.1**		**0.67**		**4.9**		**12**	
	cis-1,2-DCE	**15**		**14**		**17**		**18**		**60**	
MW-203A	PCE	**2.1**		**2.4**		**3.5**		**3**		**3.8**	
	TCE	**6.3**		**6.4**		**8.5**		**9.7**		**8.9**	
	cis-1,2-DCE	**2.3**		**1.8**		**2**		**1.5**		**1.2**	
MW-203B	PCE	**3.6**		**0.87**		**1.1**		0.5	U	0.5	U
	TCE	**18**		**27**		**29**		**27**		**15**	
	cis-1,2-DCE	**2**		**5.2**		**14**		**24**		**28**	
MW-203C	PCE	**0.59**		0.5	U	**0.61**		0.5	U	**0.63**	
	TCE	**0.59**		**0.67**		**2.3**		**4.7**		**6**	
	cis-1,2-DCE	0.5	U	0.5	U	0.5	U	**0.67**		**1.1**	
MW-204C	PCE	1	U	0.5	U	0.5	U	0.5	U	5	U
	TCE	1		**0.76**		**0.98**		**0.7**		**0.59**	
	cis-1,2-DCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
MW-205A	PCE	1	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	0.5	U	**25**		**14**		**5.6**		**8.8**	
	cis-1,2-DCE	0.5	U	**19**		**43**		**6.3**		**57**	
MW-205B	PCE	1	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	1		**0.68**		**0.85**		**0.67**		**0.68**	
	cis-1,2-DCE	**210**		**170**		**150**		**130**		**130**	
MW-206A	PCE	**0.53**		0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**25**		**17**		**19**		**8.9**		**13**	
	cis-1,2-DCE	**20**		**14**		**44**		**9.9**		**22**	
MW-206B	PCE	1	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	**1.2**		**4.4**		**4.4**		**4.6**		**0.52**	
	cis-1,2-DCE	**280**		**240**		**220**		**220**		**230**	
MW-211M	PCE	1	U	0.5	U	0.5	U	0.5	U	0.5	U
	TCE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	cis-1,2-DCE	**1.7**		**1.4**		**3.1**		**1.9**		2.2	

Bold and shaded = results exceeds the MCL.

* MW-23A and 23B were switched in the field. The correct data is in the table.

J = The identification of the analyte is acceptable; the reported value is an estimate.

NS = Not sampled

U = The analyte was not detected at or above the reporting limit.

UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Table 2.8 Plume Volume and Mass EVS Calculations

	PCE		TCE		cis-1,2-DCE	
Concentration (µg/L)	Aquifer Volume* (acre-feet)	Chemical Mass in Groundwater (kg)	Aquifer Volume* (acre-feet)	Chemical Mass in Groundwater (kg)	Aquifer Volume* (acre-feet)	Chemical Mass in Groundwater (kg)
October-07						
>5	926	11	9,193	95	NA	NA
>50	243	7.60	2,180	52	NA	NA
>100	100	4.50	343	14	NA	NA
>250	3.50	0.30	4.40	0.40	NA	NA
October-08						
>5	1,178	9.03	6,412	40	9,446	153
>50	152	4.07	366	11	2,210	118
>100	41	1.77	107	5.26	1,215	96
>250	0	0	8.70	0.76	411	58
October-09						
>5	747.19	5.91	7,397.22	43.92	6,706.97	84.16
>50	106.91	2.50	267.82	10.67	1,491.16	58.23
>100	17.83	0.66	83.13	7.05	662.32	40.08
>250	0	0	32.16	4.60	144.76	15.79

Note: Mass and volume greater than 5 µg/L is a sum of the higher concentration ranges.

*Total aquifer volume (groundwater assumed to be 25 percent of aquifer volume)

kg = kilograms

µg/L = microgram per liter

NA - Not determined in 2007

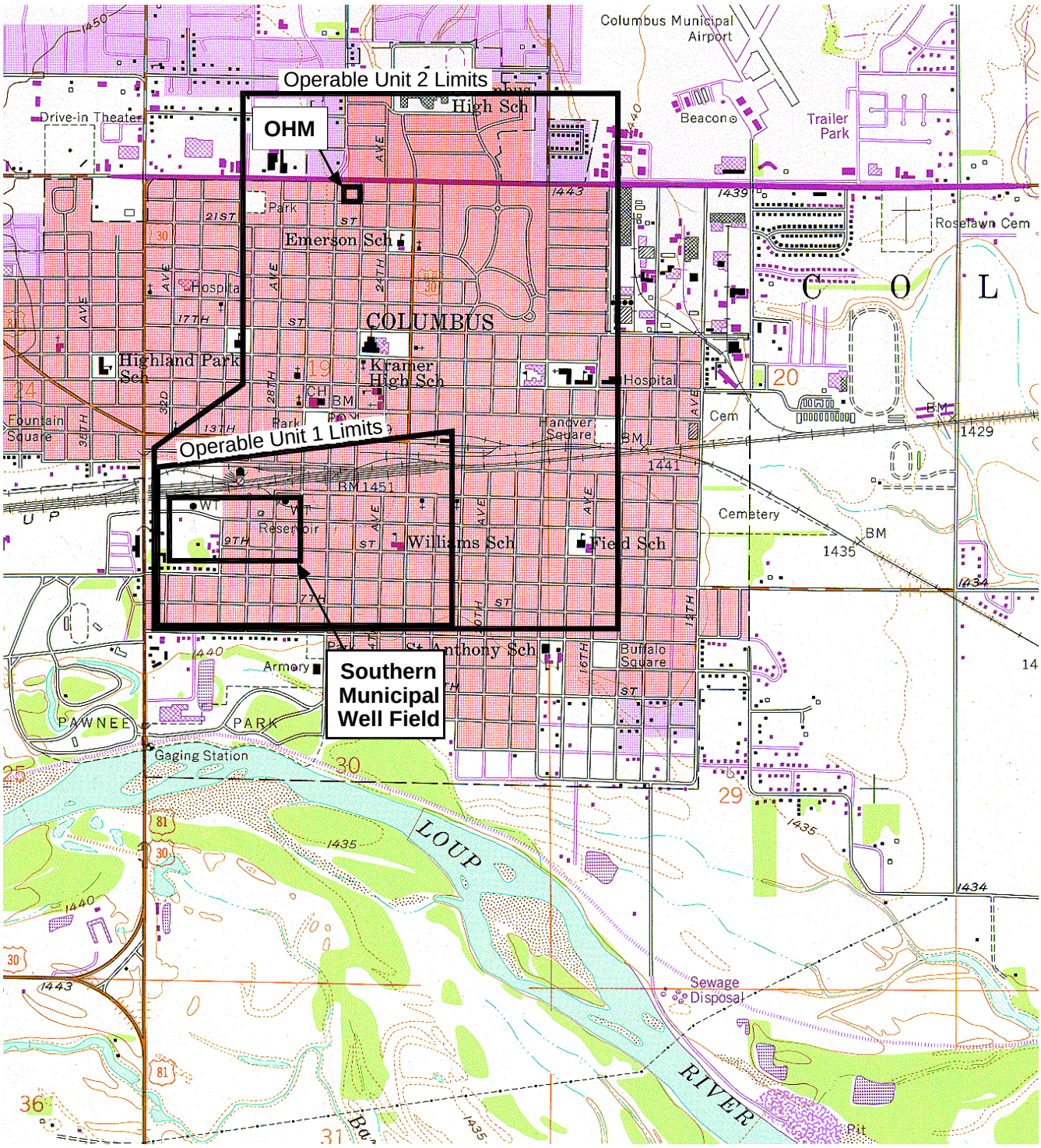
Table 2.9 10th Street Site Well Vault Replacements

Well Number	Location	Completion Date	Issues	Repaired/ Inspected
1A	10th St and 25 Ave Behind Liberty Cleaners	19-Aug-09	None	Repaired
1B	10th St and 25 Ave Behind Liberty Cleaners	19-Aug-09	None	Repaired
2A	10th St and 25th Ave SE Corner of Parking Lot	19-Aug-09	Extended Skirt to Ground Level	Repaired
2B	10th St and 25th Ave SE Corner of Parking Lot	19-Aug-09	None	Repaired
2C	10th St and 25th Ave SE Corner of Parking Lot	21-Aug-09	Extended Skirt to Ground Level	Repaired
6A	7th St between 24th and 25th Ave	21-Aug-09	None	Repaired
6B	7th St between 24th and 25th Ave	21-Aug-09	None	Repaired
7A	Alley between 7th and 8th St and between 27th and 28th Ave	21-Aug-09	None	Repaired
7B	Alley between 7th and 8th St and between 27th and 28th Ave	21-Aug-09	None	Repaired
8A	9th St and 26th Ave	21-Aug-09	None	Repaired
8B	9th St and 26th Ave	21-Aug-09	None	Repaired
9A	10th St In Alley Between 28th and 29 Ave	21-Aug-09	None	Repaired
9B	10th St In Alley Between 28th and 29 Ave	21-Aug-09	None	Repaired
10A	10th St and 30th Ave	21-Aug-09	Well was Damaged, Replaced as MW-10AR	Repaired
10B	10th St and 30th Ave	21-Aug-09	None	Repaired
11A	6th St between 24th and 25th Ave	21-Aug-09	Extended Skirt to Ground Level	Repaired
11B	6th St between 24th and 25th Ave	21-Aug-09	None	Repaired
12A	11th St and 28th Ave	21-Aug-09	None	Repaired
12B	11th St and 28th Ave	21-Aug-09	None	Repaired
12C	11th St and 28th Ave	21-Aug-09	None	Repaired
13A	11th St and 26th Ave	21-Aug-09	None	Repaired
13B	11th St and 26th Ave	21-Aug-09	None	Repaired
13C	11th St and 26th Ave	21-Aug-09	None	Repaired
13D	11th St and 26th Ave	21-Aug-09	None	Repaired
14A	12th St between 24th and 25th Ave	19-Aug-09	None	Repaired
14B	12th St between 24th and 25th Ave	19-Aug-09	Extended Skirt to Ground Level	Repaired
14C	12th St between 24th and 25th Ave	19-Aug-09	None	Repaired
15A	13th St and 21st Ave	21-Aug-09	None	Repaired
15B	13th St and 21st Ave	21-Aug-09	None	Repaired
16A	13th St and 28th Ave	19-Aug-09	None	Repaired
16B	13th St and 28th Ave	19-Aug-09	None	Repaired
17A	15th St and 25th Ave	20-Aug-09	None	Repaired
17B	15th St and 25th Ave	20-Aug-09	None	Repaired
17C	15th St and 25th Ave	20-Aug-09	None	Repaired
17D	15th St and 25th Ave	20-Aug-09	None	Repaired
18A	Alley Between 14th and 15th St and 21st Ave	19-Aug-09	Extended Skirt to Ground Level	Repaired
18B	Alley Between 14th and 15th St and 21st Ave	19-Aug-09	Extended Skirt to Ground Level	Repaired
18C	Alley Between 14th and 15th St and 21st Ave	19-Aug-09	Extended Skirt to Ground Level	Repaired
19A	14th St between 16th and 17th Ave	21-Aug-09	None	Repaired
21A	17th St and 24th Ave	19-Aug-09	None	Repaired
21B	17th St and 24th Ave	19-Aug-09	None	Repaired
26A	22nd St and 25th Ave	18-Aug-09	None	Repaired
26B	22nd St and 25th Ave	18-Aug-09	None	Repaired
27A	22nd St between 23rd and 24th Ave	18-Aug-09	None	Repaired
27B	22nd St between 23rd and 24th Ave	18-Aug-09	None	Repaired
28A	24th St and 26th Ave	21-Aug-09	None	Repaired
28B	24th St and 26th Ave	21-Aug-09	None	Repaired
28C	24th St and 26th Ave	21-Aug-09	None	Repaired
KV-5	City Property	21-Aug-09	None	Repaired

Table 2.9 10th Street Site Well Vault Replacements (continued)

One Hour Martinizing Wells				
Well Number	Location	Completion Date	Issues	Repaired/ Inspected
SVE-8	23rd St and 25th Ave near alley	21-Aug-09	None	Inspected
SVE-9	23rd St and 25th Ave alley entrance	21-Aug-09	None	Inspected
AS-8	Alley behind Treatment Building	18-Aug-09	Broke a fitting, had to repair	Repaired
CVE-21	OHM Parking Lot	18-Aug-09	Broke a fitting, had to repair	Repaired
CVE-24	OHM Parking Lot	19-Aug-09	None	Repaired
PCIX-5A	OHM Parking Lot	21-Aug-09	None	Inspected

Figures



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Revised: 3/29/10 KBR
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Legend

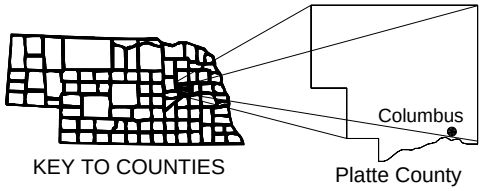
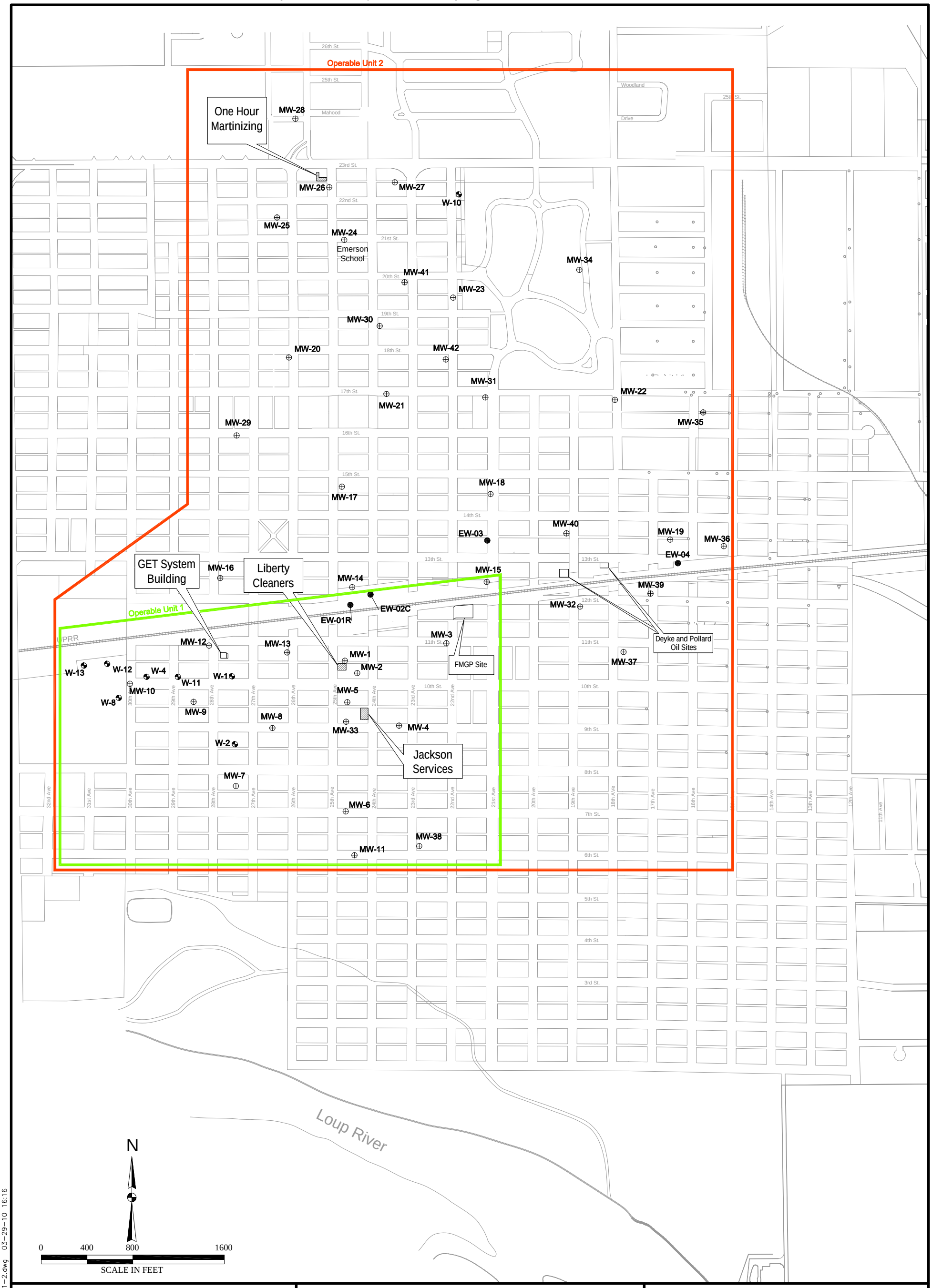


Figure 1.1

Site Location Map



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Task Order Number: 3370-002
Revised: 3/29/10 KBR

Legend

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- Operable Unit 1 Limits
- Operable Unit 2 Limits
- Source Area

Figure 1.2

Site Map

HGL HydroGeoLogic, Inc

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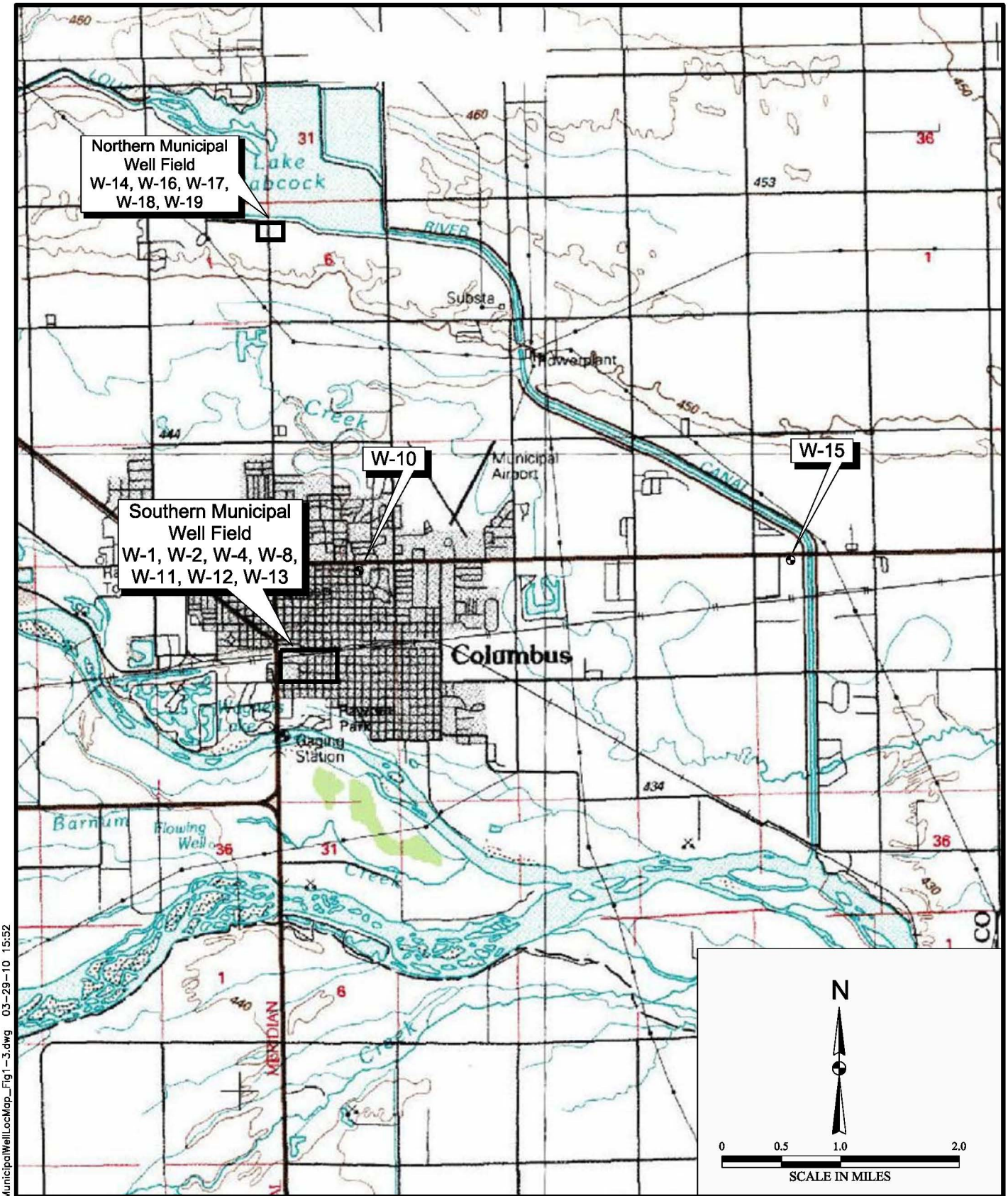

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Task Order Number: 3370-002
Revised: 3/29/10 KBR
Source: USGS Topographic Map, July 1988

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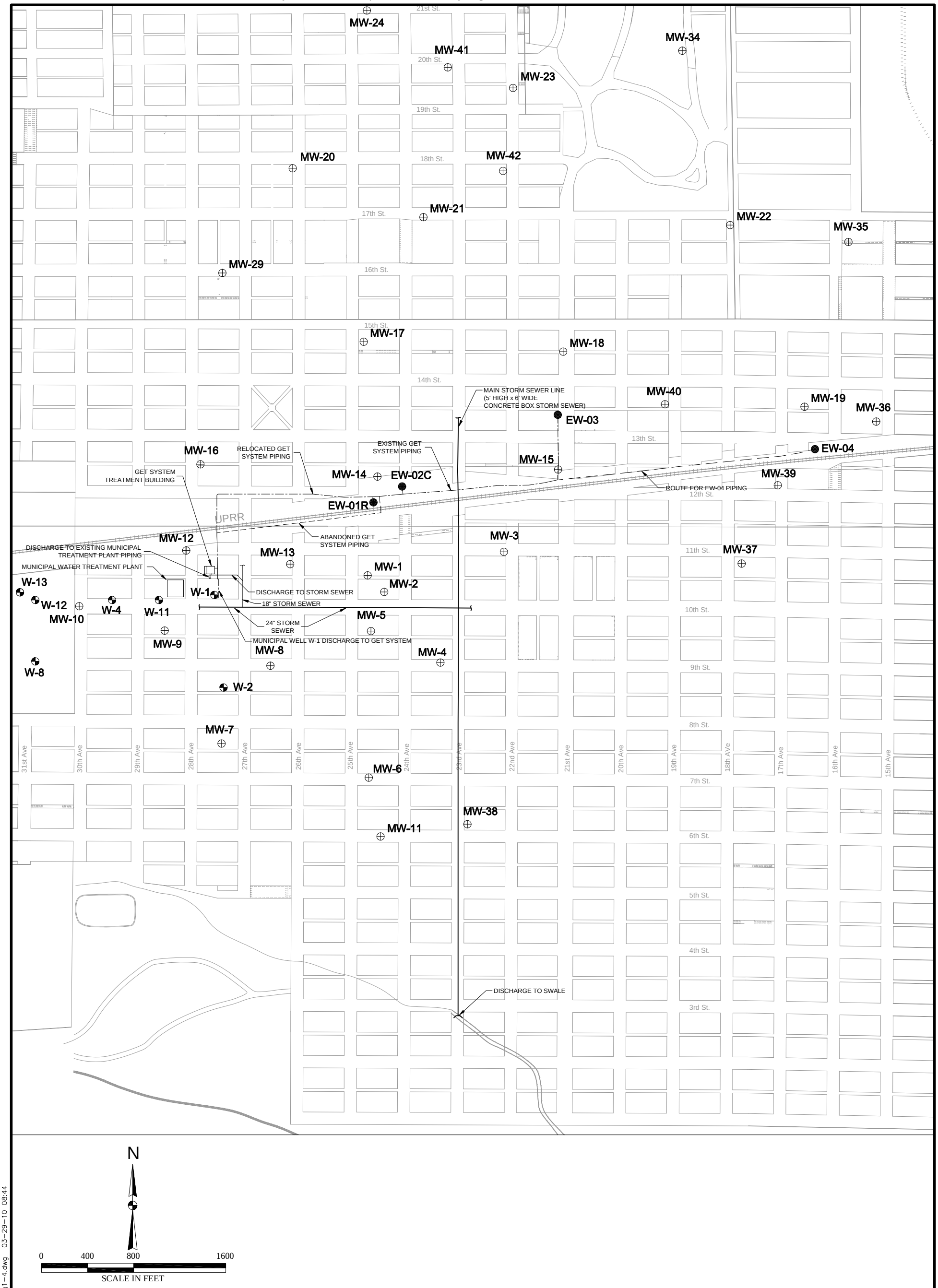
Legend

- Municipal Well Locations

Figure 1.3

Municipal Well Location Map

Y:\CAD\Tenth\GETS-PSR-2009\MunicipalWellLocMap_Fig1-3.dwg 03-29-10 15:52



Filename: Y:\...\GETS-PSR-2009\GETSystem_Fig1-4.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

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Legend

- Municipal Well Location
- Monitoring Well Location
- Extraction Well Location
- Existing GET System Influent Piping
- Abandoned GET System Influent Piping
- Discharge Piping
- Storm Sewer
- EW-04 Piping

Figure 1.4

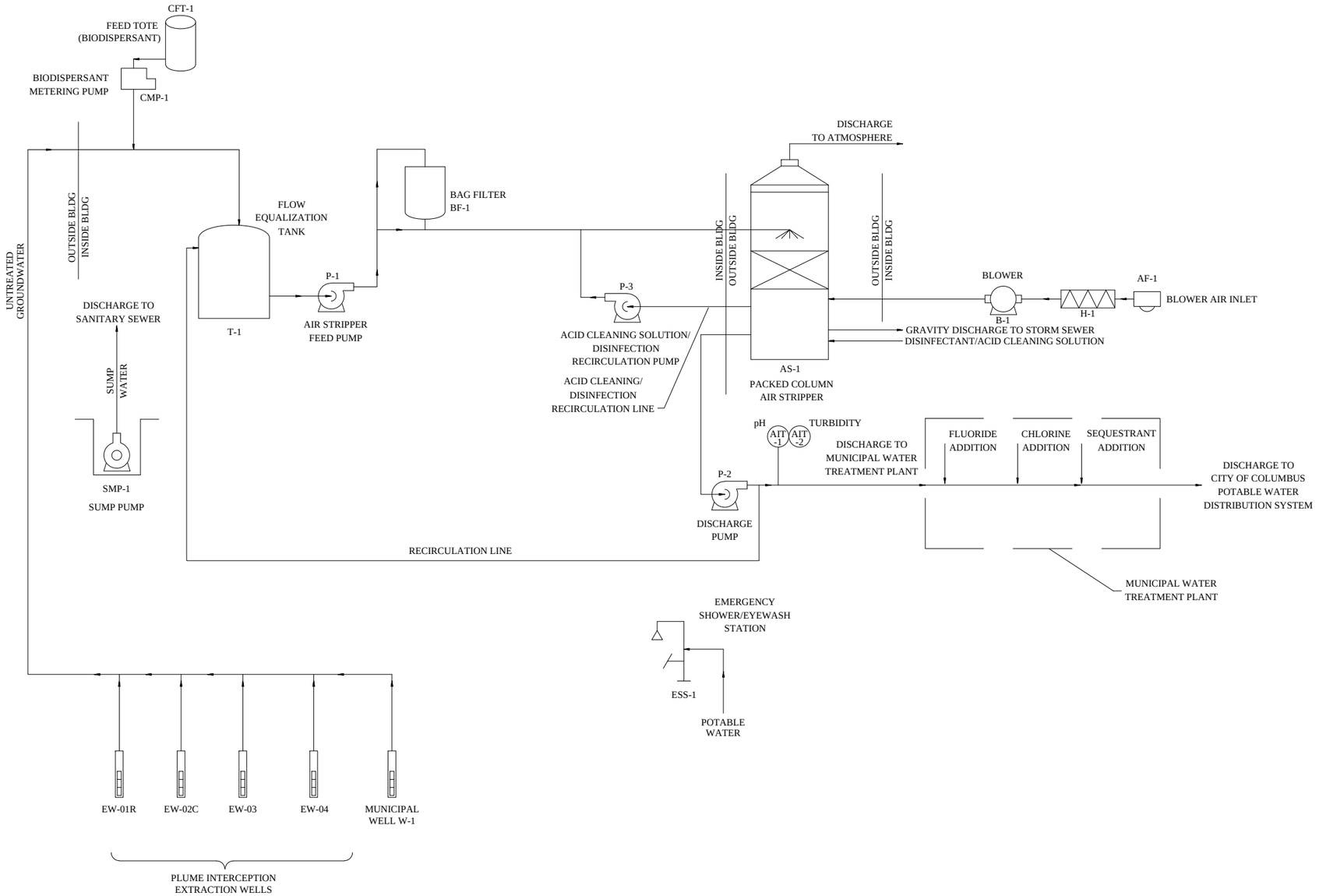
GET System Location Map

Y:\CAD\Tenth\GETS-PSR-2009\GETSystem_Fig1-4.dwg 03-29-10 08:44

2009 GET System Annual Performance Summary Report
10th Street OU2 Site, Columbus, Nebraska

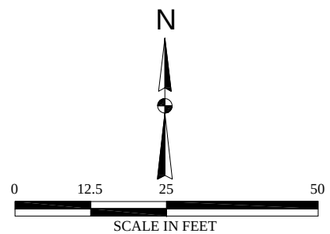
Figure 1.5
GET System Process Flow Diagram

U.S. EPA
Region 7



Legend

AF-1	BLOWER AIR FILTER INLET
AIT-1	pH ANALYSIS
AIT-2	TURBIDITY ANALYSIS
AS-1	AIR STRIPPER
B-1	AIR STRIPPER BLOWER
BF-1	BAG FILTER
CFT-1	CHEMICAL FEED TOTE
CMP-1	CHEMCIAL METERING PUMP
ESS-1	EMERGENCY SHOWER/EYEWASH STATION
EW-01R	UNCONFINED AQUIFER EXTRACTION WELL
EW-02C	CONFINED AQUIFER EXTRACTION WELL
EW-03	UNCONFINED AQUIFER EXTRACTION WELL
EW-04	UNCONFINED AQUIFER EXTRACTION WELL
H-1	DUCT HEATER
P-1	TRANSFER PUMP
P-2	EFFLUENT DISCHARGE PUMP
P-3	DISINFECTION RECIRCULATION PUMP
SMP-1	TREATMENT BUILDING SUMP PUMP
T-1	FLOW EQUALIZATION TANK
W-1	MUNICPAL WELL W-1



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Task Order Number: 3370-002
Revised: 3/29/10 KBR

HydroGeoLogic, Inc

CDM

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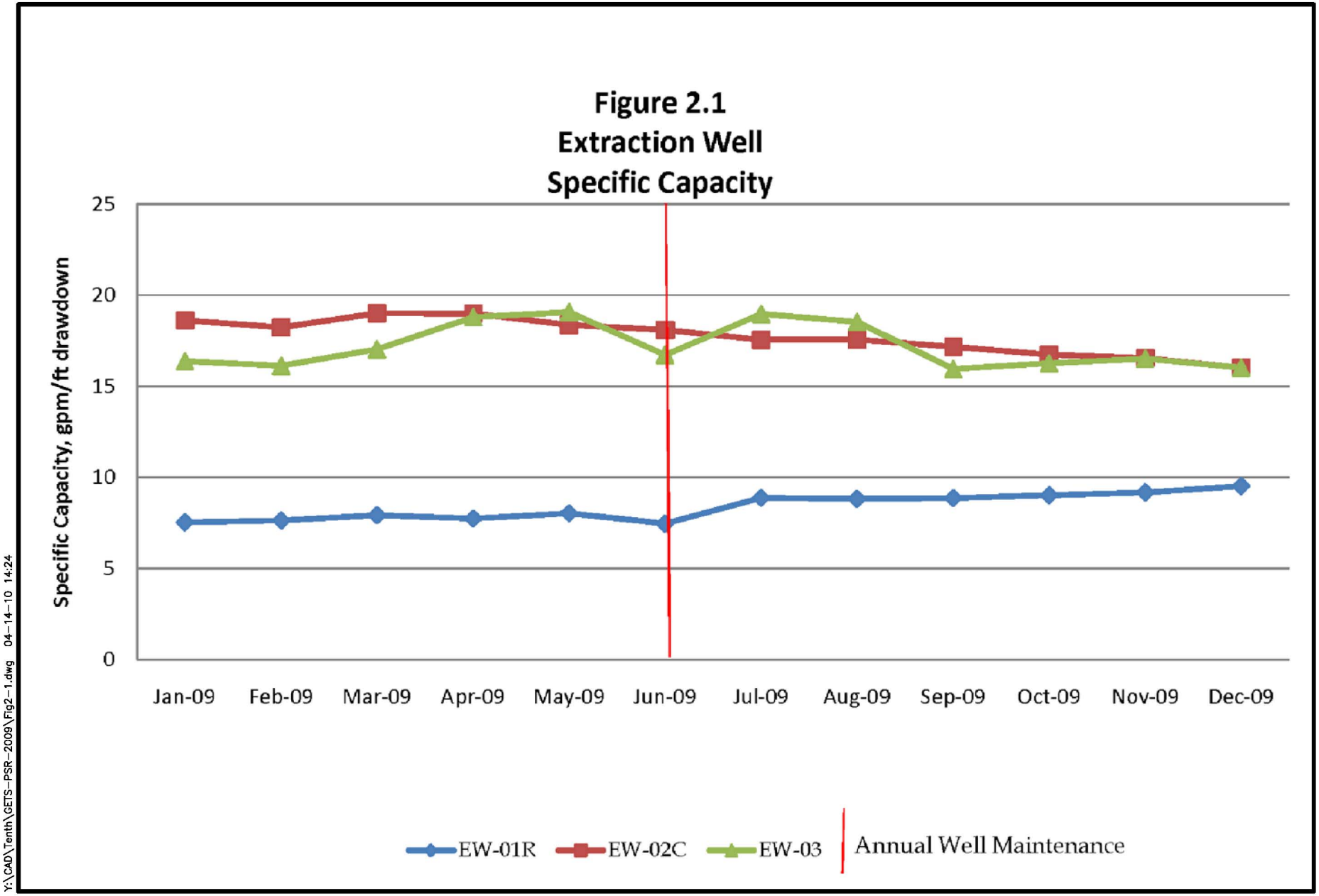

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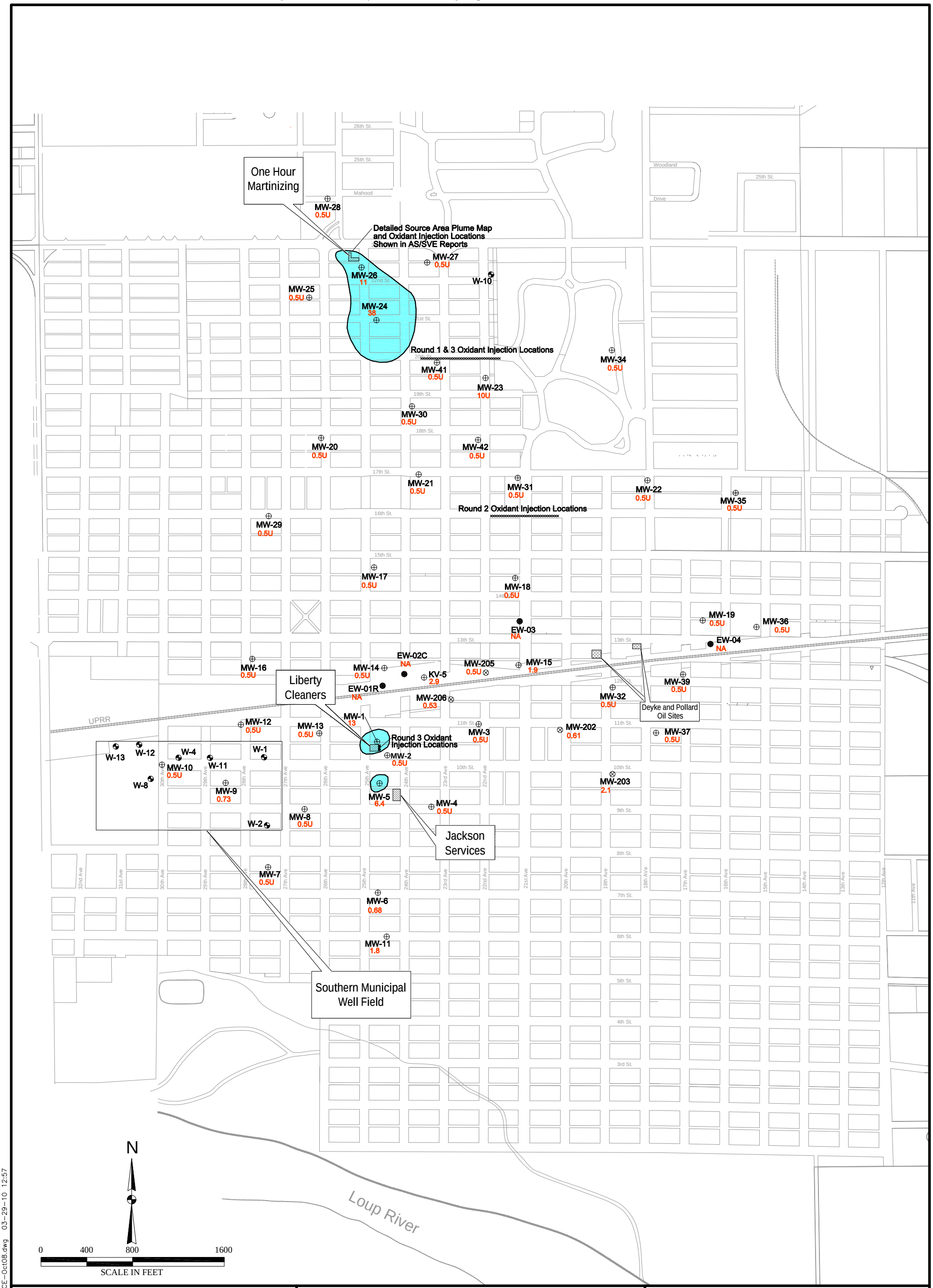
10th Street Site
Columbus, Nebraska

CDM

Figure 2.1
Extraction Well Specific Capacity



Filename: Y:\...\GETS-PSR-2009\Fig2-2_A-PCE-Oct08.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

Legend

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L PCE at 'A' Level Wells
- NA — Not Applicable

5 - 100 ug/L

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Figure 2.2

"A" Level Wells PCE Plume Shallow Aquifer October 2008

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-2_A-PCE-Oct08.dwg 03-29-10 12:57

One Hour Martinizing

Detailed Source Area Plume Map and Oxidant Injection Locations Shown in AS/SVE Reports

Round 1 & 3 Oxidant Injection Locations

Round 2 Oxidant Injection Locations

Liberty Cleaners

Deyke and Pollard Oil Sites

Jackson Services

Southern Municipal Well Field

MW-28 0.5U
MW-27 0.5U
MW-26 10
W-10
MW-25 0.5U
MW-24 17
MW-34 0.5U
MW-41 6.1
MW-23 10U
MW-30 2.5
MW-20 0.5U
MW-42 5.2
MW-21 26
MW-31 34
MW-22 0.5U
MW-35 0.5U
MW-29 0.5U
MW-17 0.5U
MW-18 12
EW-03 NA
MW-19 0.5U
MW-36 0.5U
EW-04 NA
MW-16 0.5U
MW-14 4.4
EW-02C NA
KV-5 8.5
MW-205 0.5U
MW-15 23
MW-39 2.1
EW-01R NA
MW-206 25
MW-32 0.5U
MW-12 0.5U
MW-13 0.5U
MW-1 10
MW-3 27
MW-202 4.5
MW-37 2.7
W-13
W-12
W-4
W-11
W-1
MW-10 0.5U
W-8
MW-9 0.97
MW-2 78
MW-203 6.3
MW-5 39
MW-4 3.7
W-2
MW-8 3.2
MW-7 0.5U
MW-6 0.5U
MW-11 0.5U

26th St., 25th St., Mahood, Woodland, Drive, 25th St., 21st St., 19th St., 18th St., 17th St., 16th St., 15th St., 14th St., 13th St., 12th St., 11th St., 10th St., 9th St., 8th St., 7th St., 6th St., 5th St., 4th St., 3rd St., UPRR, 32nd Ave, 31st Ave, 30th Ave, 29th Ave, 28th Ave, 27th Ave, 26th Ave, 25th Ave, 24th Ave, 23rd Ave, 22nd Ave, 21st Ave, 20th Ave, 19th Ave, 18th AVe, 17th Ave, 16th Ave, 15th Ave, 14th Ave, 13th Ave, 12th Ave, 11th Ave

N

0 400 800 1600

SCALE IN FEET

Loup River

Filename: Y:\...\GETS-PSR-2009\Fig2-3_A-TCE-Oct08.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

HGL HydroGeoLogic, Inc

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Legend

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L TCE at 'A' Level Wells
- NA — Not Applicable

5 - 100 ug/L

Figure 2.3

"A" Level Wells TCE Plume Shallow Aquifer October 2008

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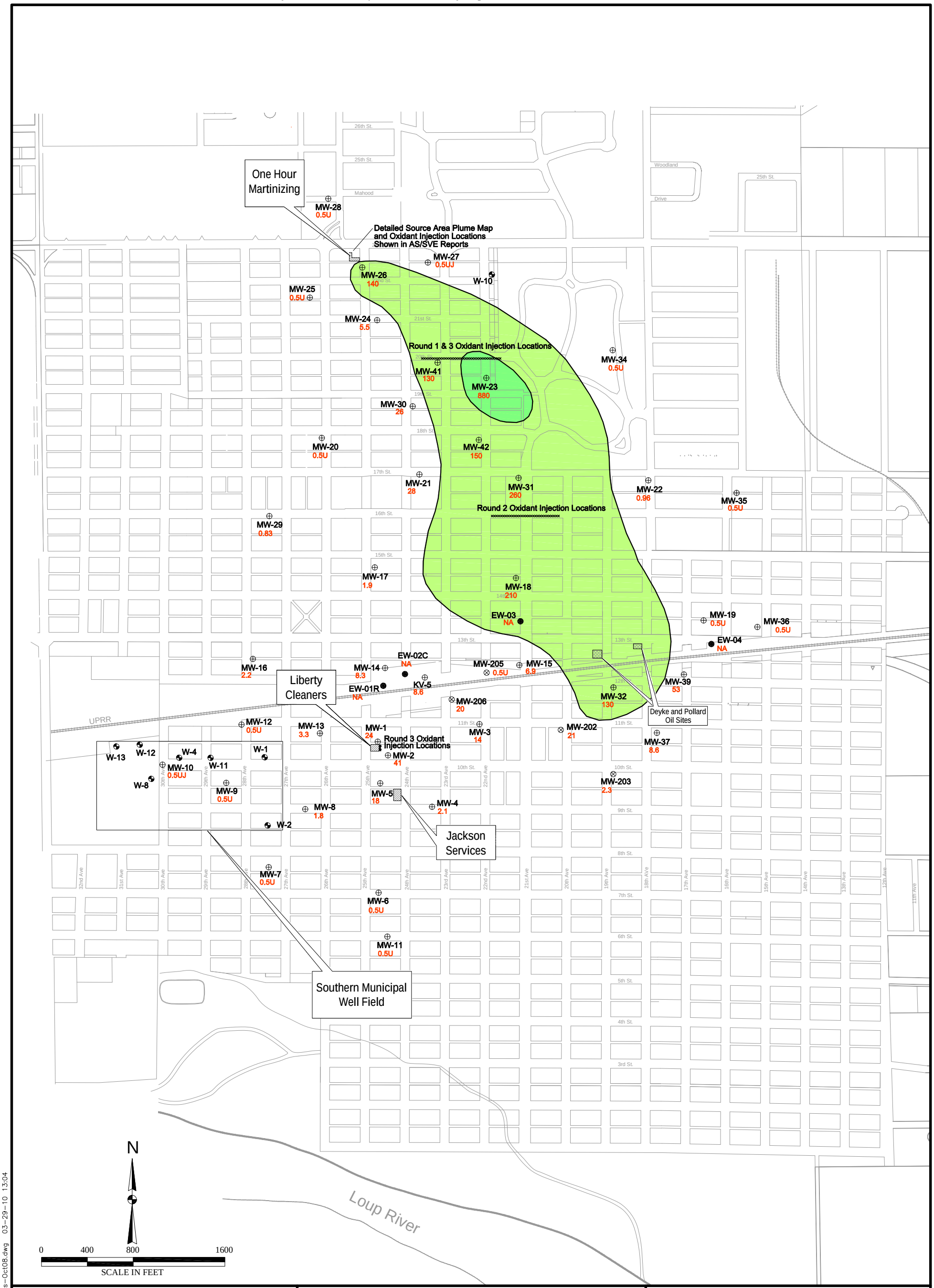

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Task Order Number: 3370-002
Revised: 3/29/10 KBR

HydroGeoLogic, Inc

CDM

	Municipal Well Location
	Monitoring Well Nests
	Extraction Well Location
	FMGP Monitoring Well Location
	Source Area
U	Undetected above the stated reporting limit
39	ug/L cis-1,2-DCE at 'A' Level Wells
J	Estimated
NA	Not Applicable

Legend

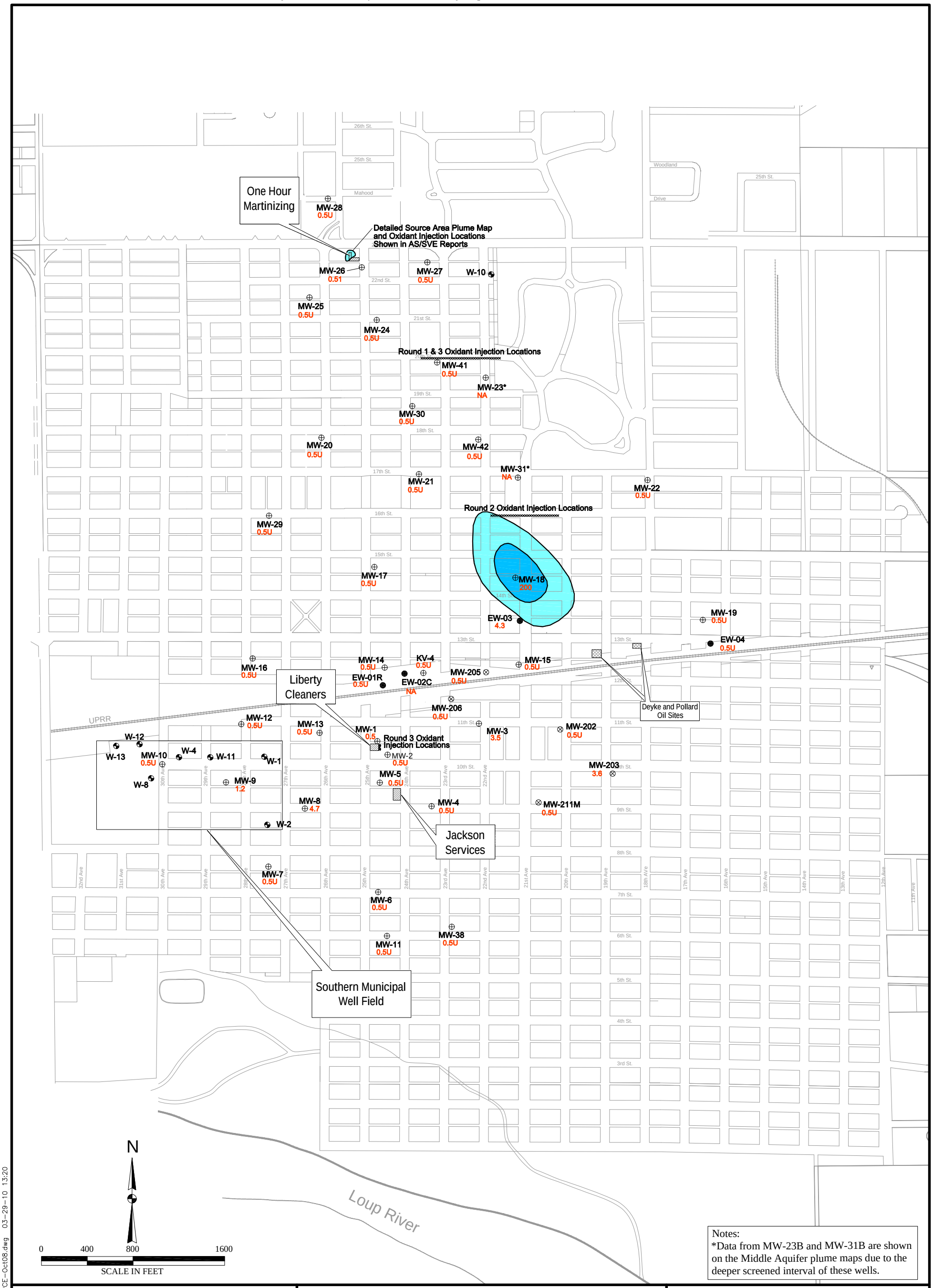
> 500 ug/L

70 - 500 ug/L

Figure 2.4

"A" Level Wells cis-1,2-DCE Plume Shallow Aquifer October 2008

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-4_A-cis-Oct08.dwg 03-29-10 13:04



Notes:
*Data from MW-23B and MW-31B are shown on the Middle Aquifer plume maps due to the deeper screened interval of these wells.

Filename: Y:\...\GETS-PSR-2009\Fig2-5_B-PCE-Oct08.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

HGL HydroGeoLogic, Inc

CDM

Legend

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L PCE at 'B' Level Wells
- NA — Not Applicable

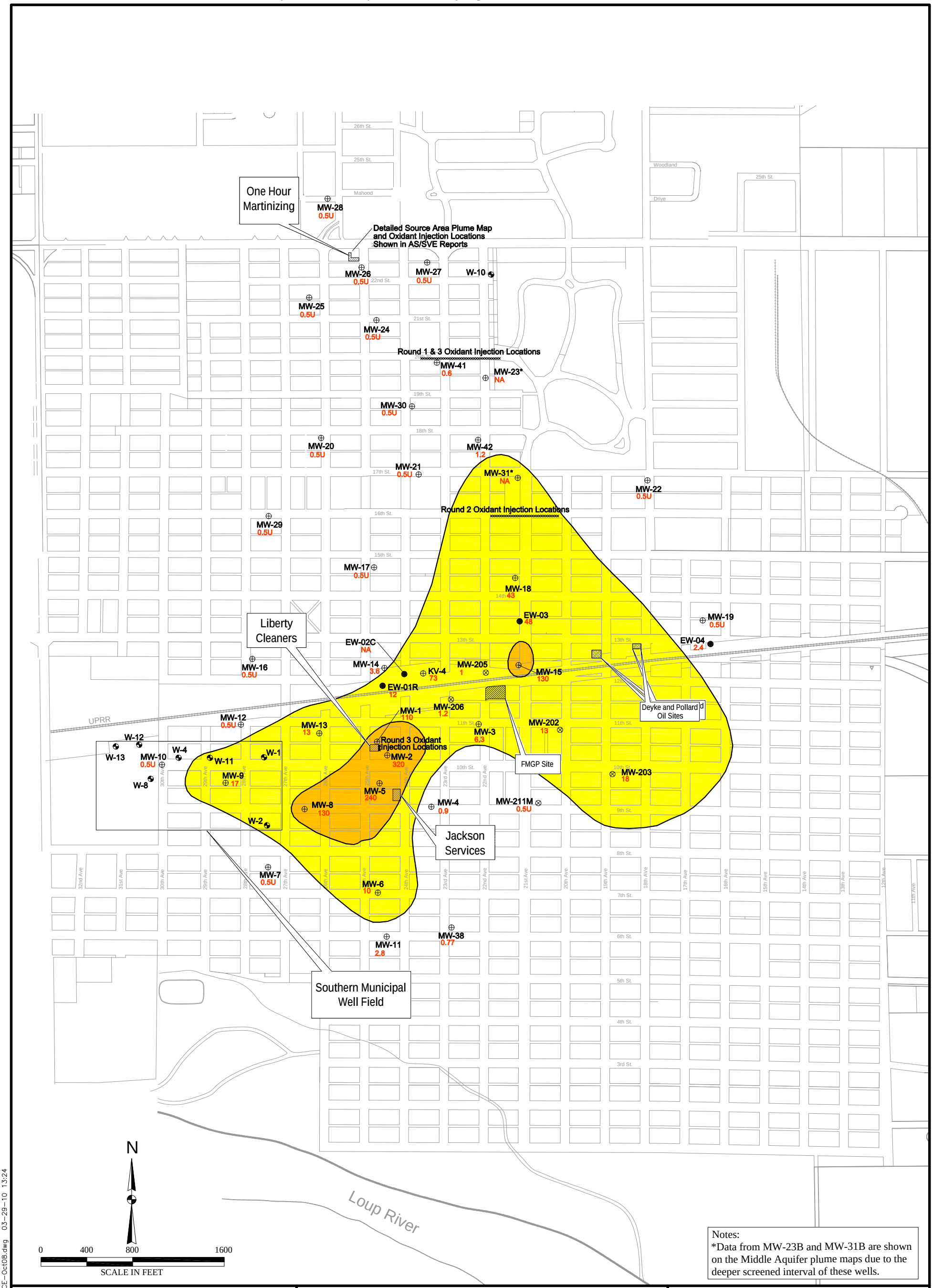
100 - 500 ug/L

5 - 100 ug/L

Figure 2.5

"B" Level Wells PCE Plume Shallow Aquifer October 2008

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-5_B-PCE-Oct08.dwg 03-29-10 13:20



Notes:
*Data from MW-23B and MW-31B are shown on the Middle Aquifer plume maps due to the deeper screened interval of these wells.

Filename: Y:\...\GETS-PSR-2009\Fig2-6_B-TCE-Oct08.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L TCE at 'B' Level Wells
- NA — Not Applicable

Legend

100 - 500 ug/L

5 - 100 ug/L

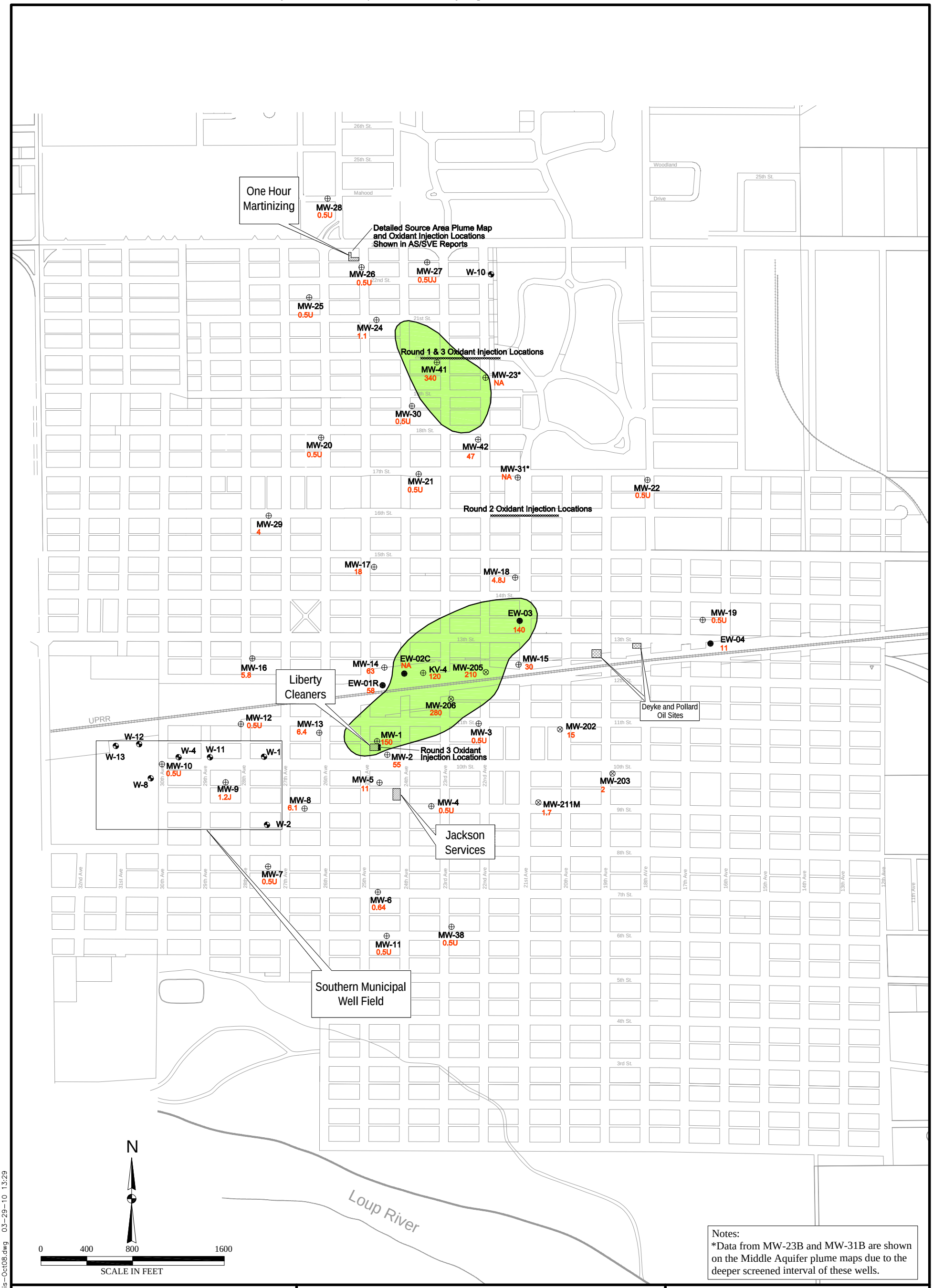
HGL HydroGeoLogic, Inc

CDM

Figure 2.6

"B" Level Wells TCE Plume Shallow Aquifer October 2008

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-6_B-TCE-Oct08.dwg 03-29-10 13:24



Notes:
*Data from MW-23B and MW-31B are shown on the Middle Aquifer plume maps due to the deeper screened interval of these wells.

Filename: Y:\...\GETS-PSR-2008\Fig2-7_B-cis-Oct08.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

HGL HydroGeoLogic, Inc

CDM

Legend

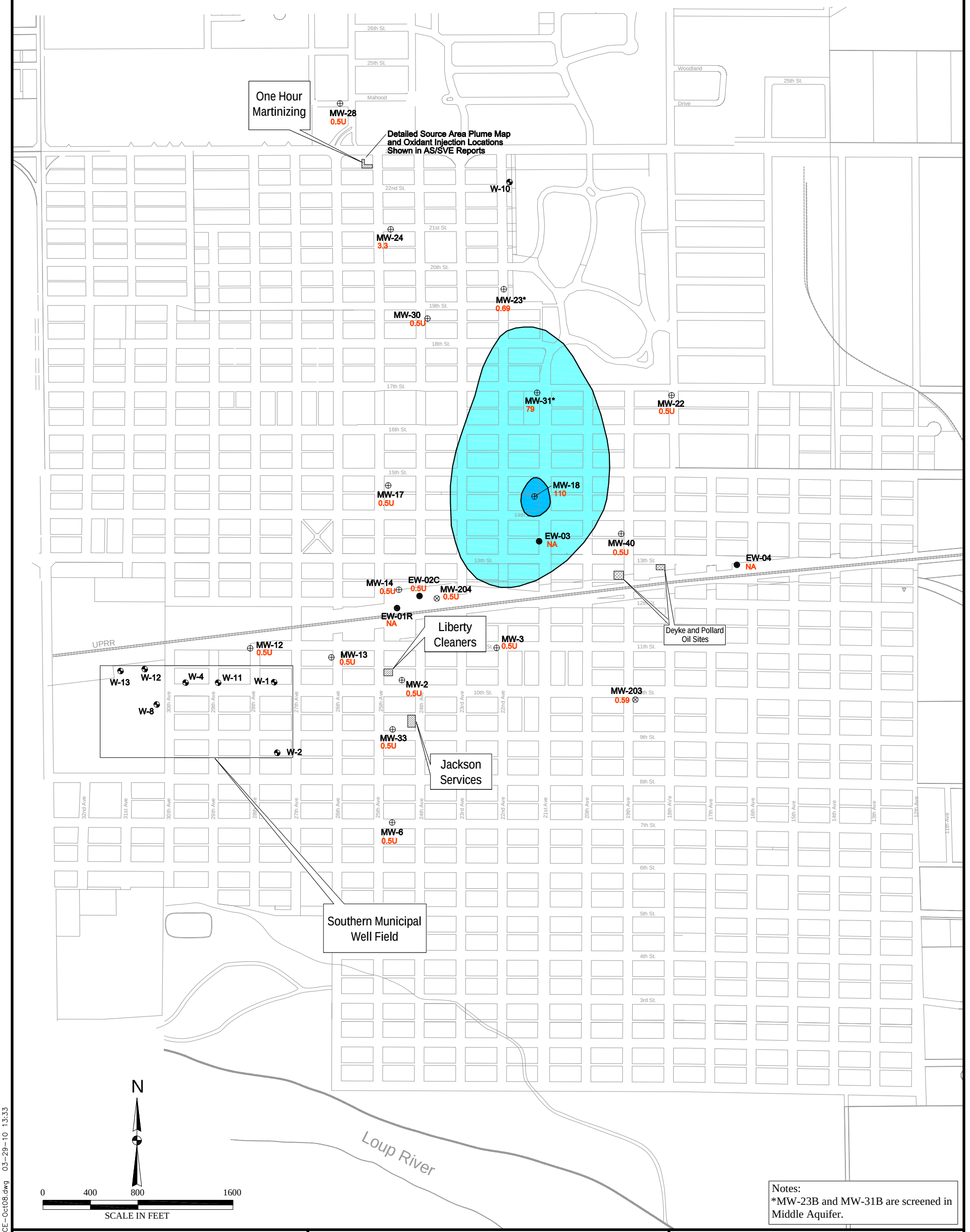
70 - 500 ug/L

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L cis-1,2-DCE at 'B' Level Wells
- NA — Not Applicable
- J — Estimated

Figure 2.7

"B" Level Wells cis-1,2-DCE Plume Shallow Aquifer October 2008

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-7_B-cis-Oct08.dwg 03-29-10 13:29



Filename: Y:\...\GETS-PSR-2009\Fig2-8_C-PCE-Oct08.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

HGL HydroGeoLogic, Inc

CDM

Legend

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L PCE at 'C' Level Wells
- NA — Not Applicable

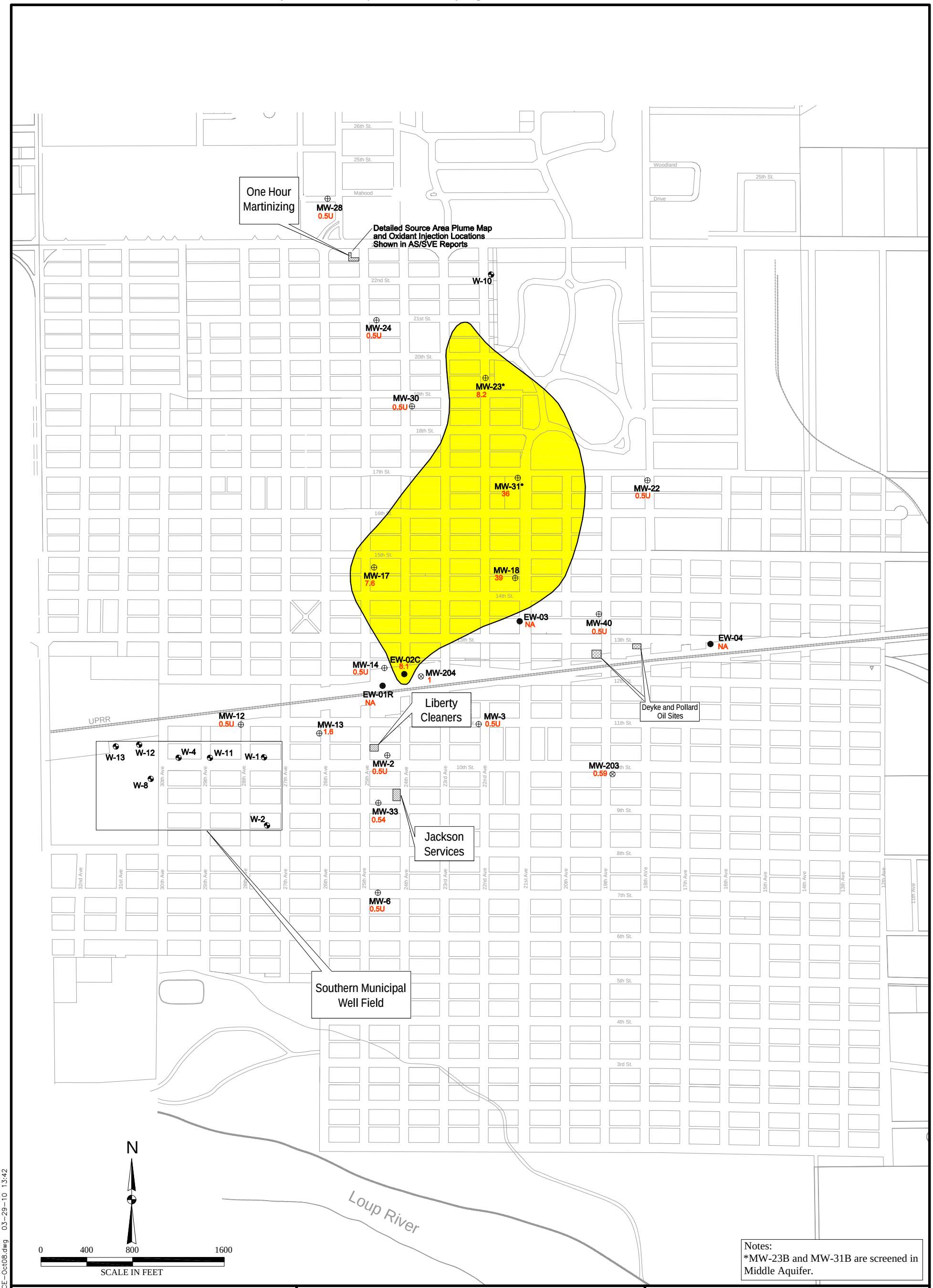
100 - 500 ug/L

5 - 100 ug/L

Figure 2.8

"C" Level Wells PCE Plume Middle Aquifer October 2008

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-8_C-PCE-Oct08.dwg 03-29-10 13:33



Filename: Y:\...\GETS-PSR-2009\Fig2-9_C-TCE-Oct08.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

HGL HydroGeoLogic, Inc

CDM

Legend

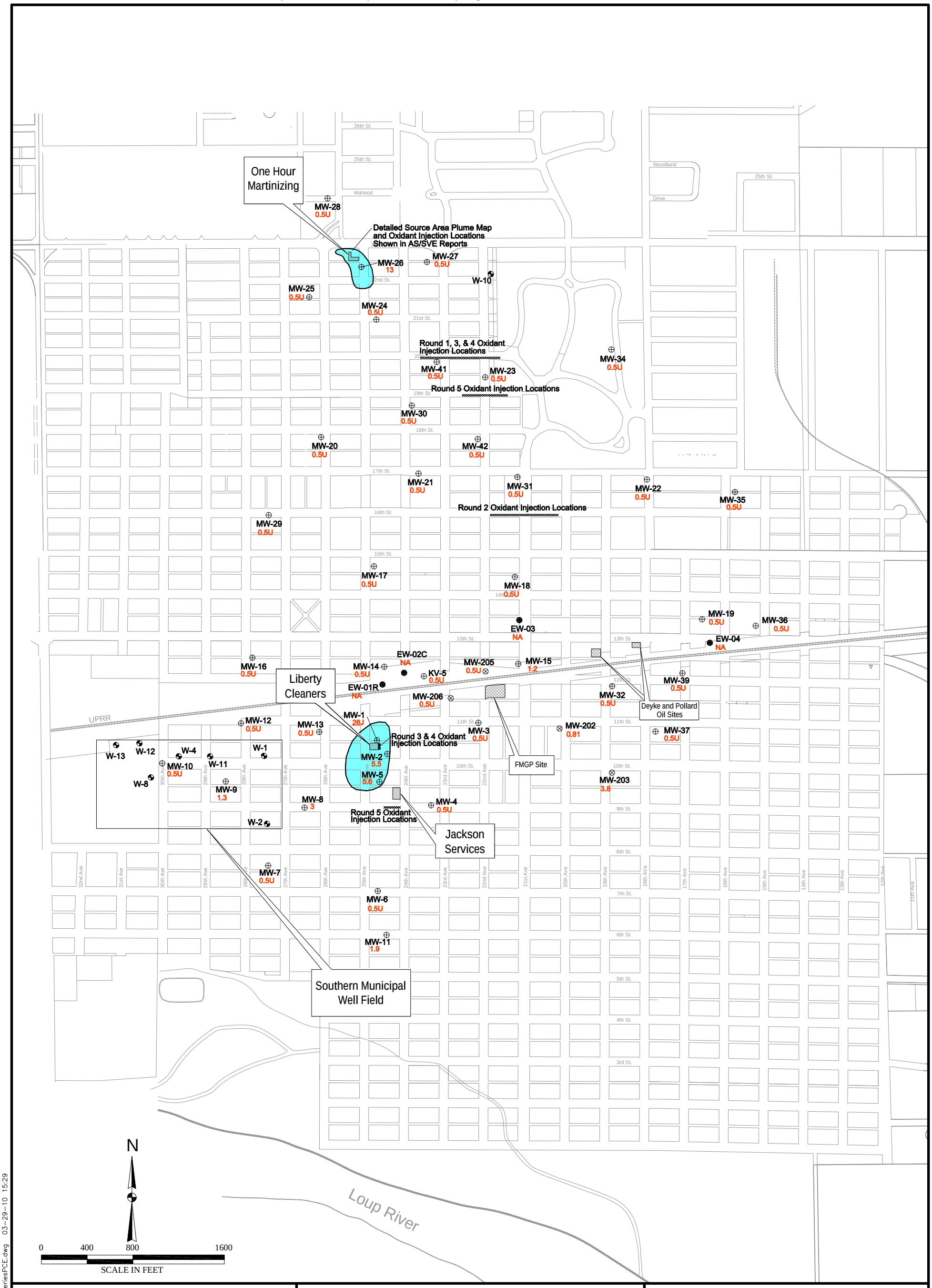
- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L TCE at 'C' Level Wells
- NA — Not Applicable

5 - 100 ug/L

Figure 2.9

"C" Level Wells TCE Plume Middle Aquifer October 2008

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-9_C-TCE-Oct08.dwg 03-29-10 13:42



Filename: Y:\...\GETS-PSR-2009\Fig2-10_AseriesPCE.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

Legend

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- Non Site-related Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L PCE at 'A' Level Wells
- NA — Not Applicable
- J — Estimated

5 - 100 ug/L

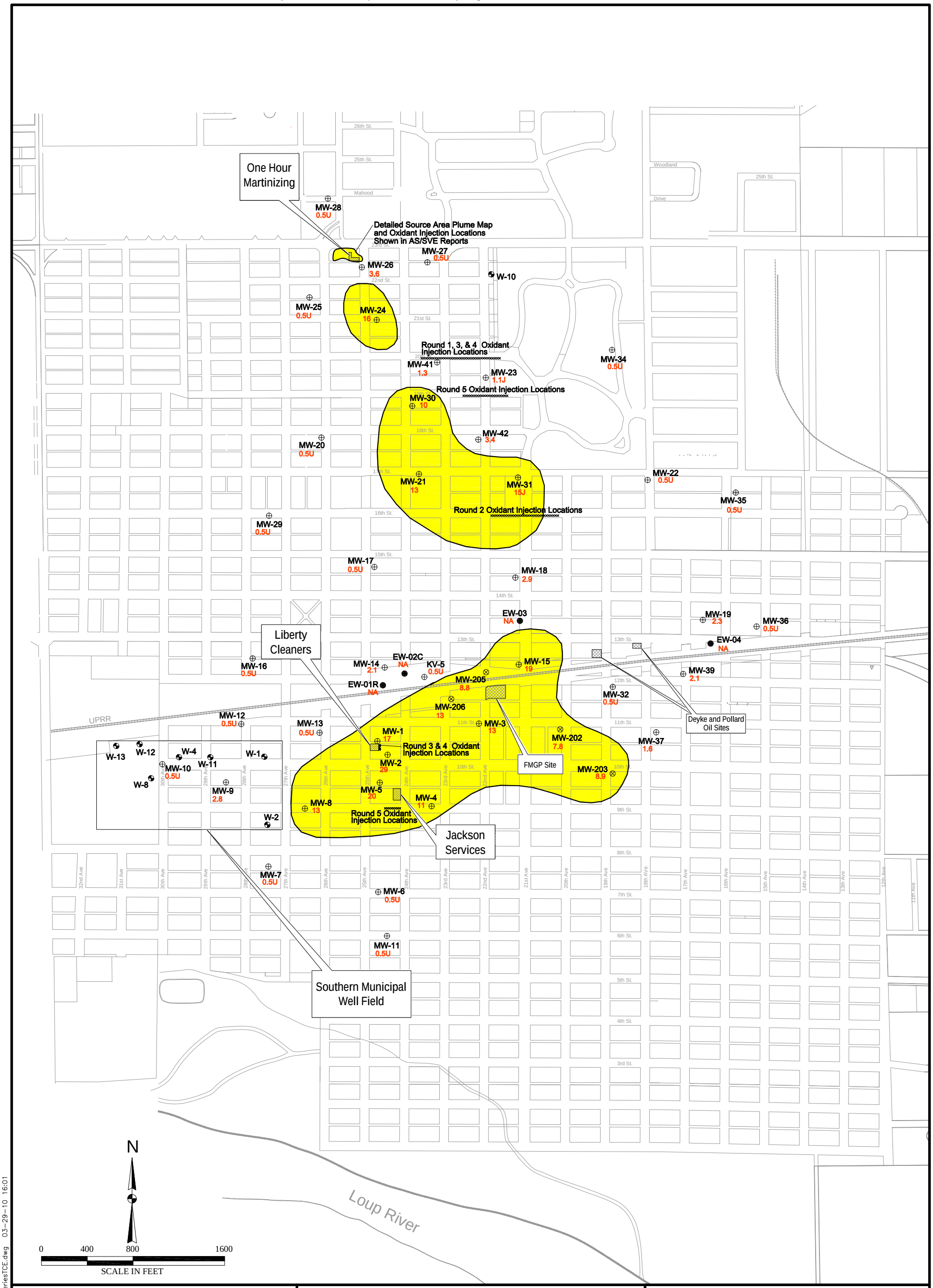
HGL HydroGeoLogic, Inc

CDM

Figure 2.10

"A" Level Wells PCE Plume Shallow Aquifer October 2009

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-10_AseriesPCE.dwg 03-29-10 15:29



Filename: Y:\...\GETS-PSR-2009\Fig2-11_AseriesTCE.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- Non Site-related Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L TCE at 'A' Level Wells
- NA — Not Applicable
- J — Estimated

Legend

5 - 100 ug/L

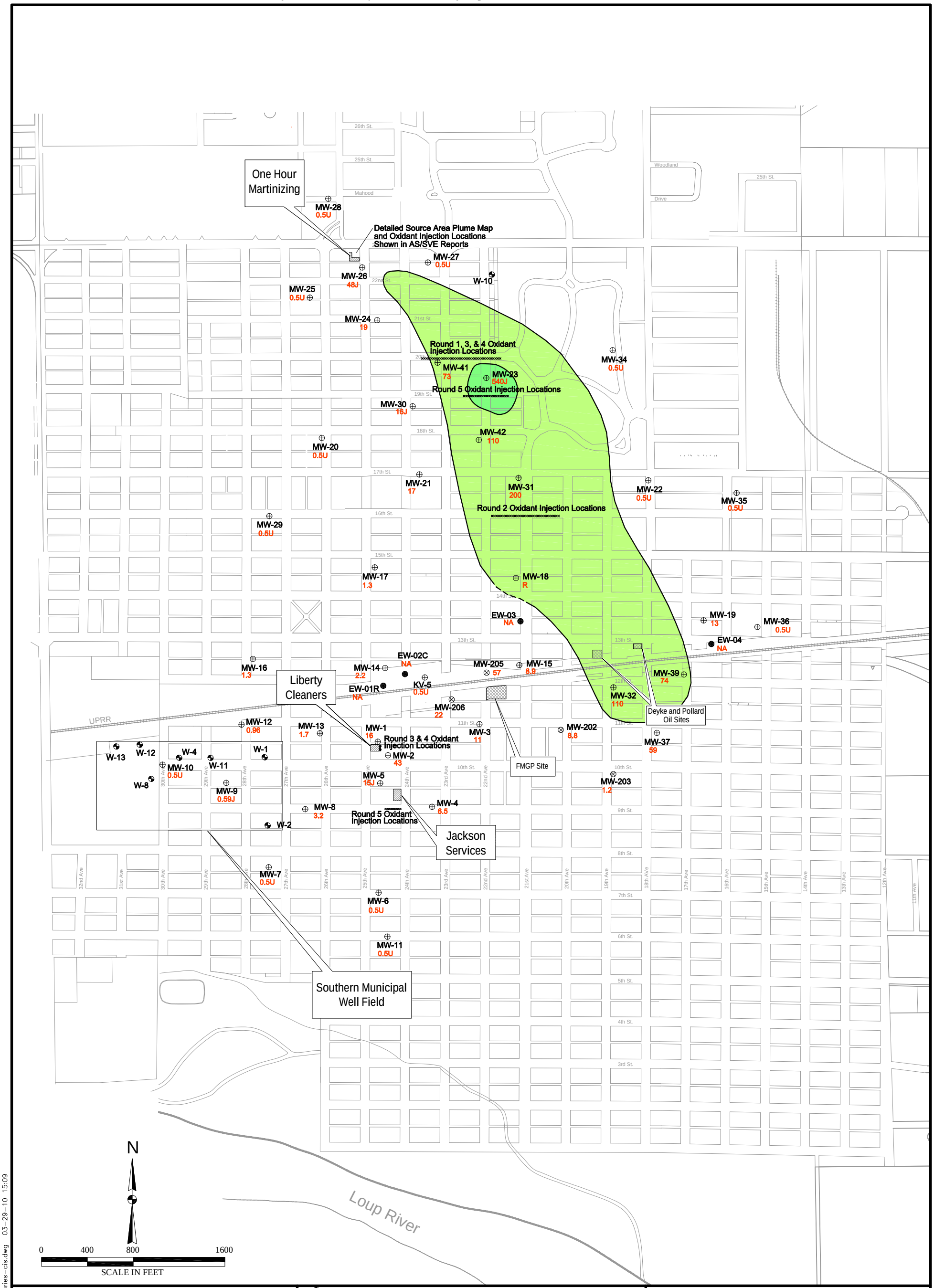
HGL HydroGeoLogic, Inc

CDM

Figure 2.11

"A" Level Wells TCE Plume Shallow Aquifer October 2009

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-11_AseriesTCE.dwg 03-29-10 16:01



Filename: Y:\...\GETS-PSR-2009\Fig2-12_Aseries-cis.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

HydroGeoLogic, Inc

CDM

Legend

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- Non Site-related Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L cis-1,2-DCE at 'A' Level Wells
- J — Estimated
- NA — Not Applicable
- R — Data rejected due to quality control problems

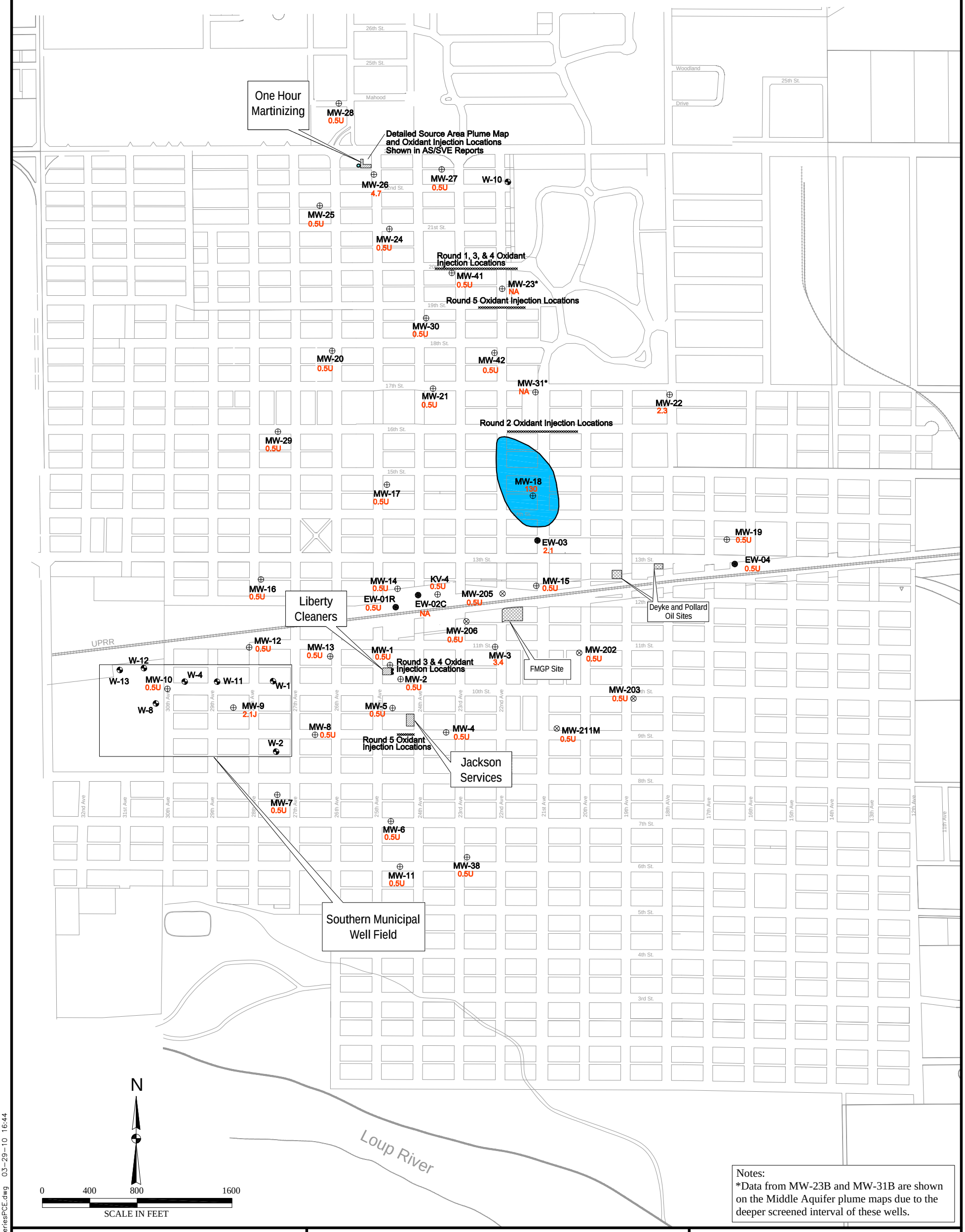
70 - 500 ug/L

500 - 1,000 ug/L

Figure 2.12

"A" Level Wells cis-1,2-DCE Plume Shallow Aquifer October 2009

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-12_Aseries-cis.dwg 03-29-10 15:09



Filename: Y:\...\GETS-PSR-2009Fig2-13_BseriesPCE.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

HGL HydroGeoLogic, Inc

CDM

Legend

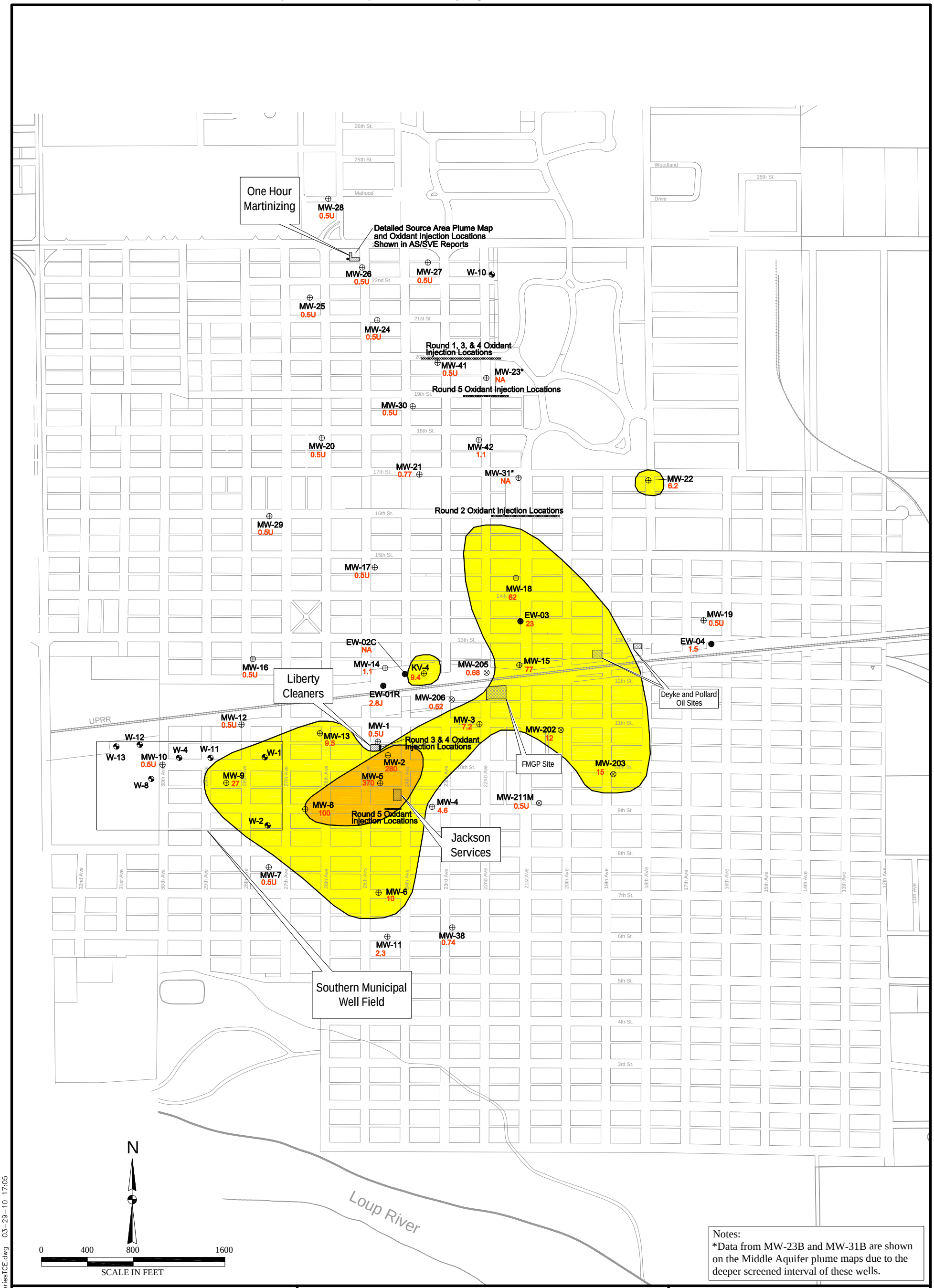
- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- Non Site-related Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L PCE at 'B' Level Wells
- NA — Not Applicable

100 - 500 ug/L

Figure 2.13

"B" Level Wells PCE Plume Shallow Aquifer October 2009

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-13_BseriesPCE.dwg 03-29-10 16:44



Filename: Y:\...\GETS-PSR-2009\Fig2-14_BseriesTCE.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

HGL HydroGeoLogic, Inc

CDM

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- Non Site-related Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L TCE at 'B' Level Wells
- NA — Not Applicable
- J — Estimated

Legend

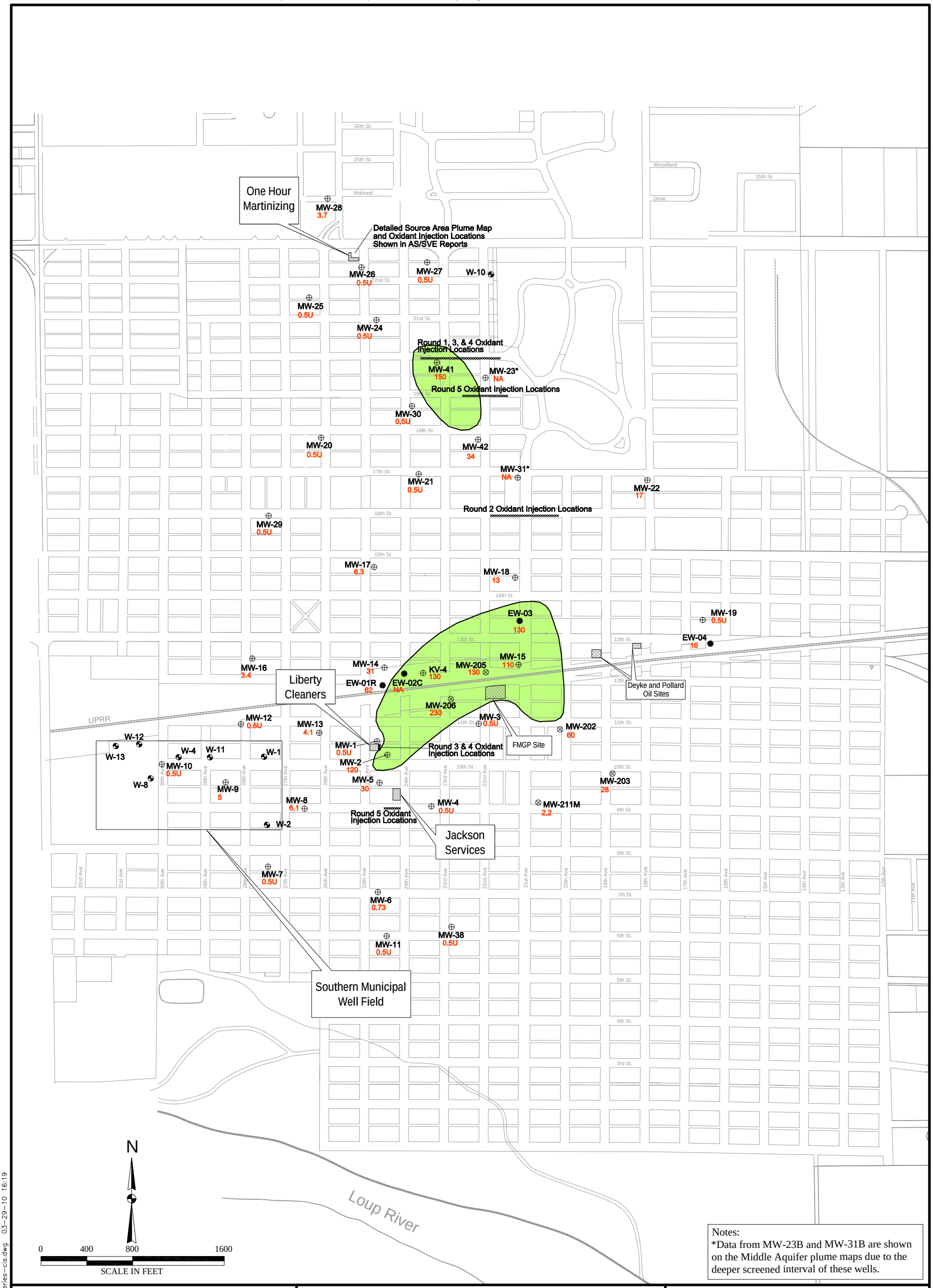
100 - 500 ug/L

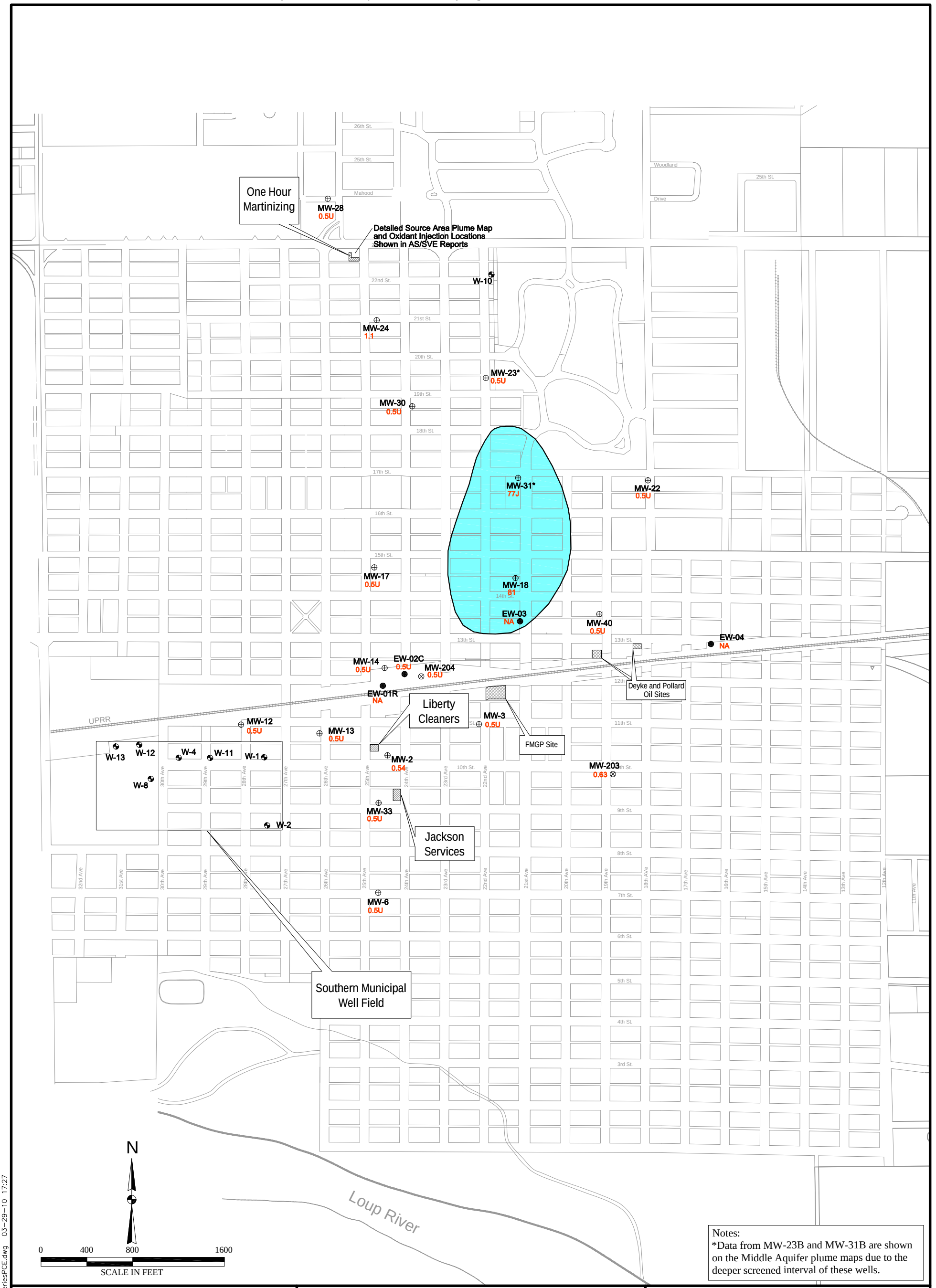
5 - 100 ug/L

Figure 2.14

"B" Level Wells TCE Plume Shallow Aquifer October 2009

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-14_BseriesTCE.dwg 03-29-10 17:05


One Hour Martinizing
Detailed Source Area Plume Map and Oxidant Injection Locations Shown in AS/SVE Reports
Round 1, 3, & 4 Oxidant Injection Locations
Round 5 Oxidant Injection Locations
Round 2 Oxidant Injection Locations
Round 3 & 4 Oxidant Injection Locations
Round 5 Oxidant Injection Locations
Liberty Cleaners
Jackson Services
Southern Municipal Well Field
Deyke and Pollard Oil Sites
FMGP Site
MW-28 3.7
MW-26 0.5U
MW-27 0.5U
W-10
MW-25 0.5U
MW-24 0.5U
MW-41 150
MW-23* NA
MW-30 0.5U
MW-20 0.5U
MW-42 34
MW-31* NA
MW-21 0.5U
MW-22 17
MW-29 0.5U
MW-17 6.3
MW-18 13
EW-03 130
MW-19 0.5U
EW-04 16
MW-16 3.4
MW-14 31
KV-4 130
MW-205 130
MW-15 110
EW-01R 62
EW-02C NA
MW-206 230
MW-12 0.5U
MW-13 4.1
MW-3 0.5U
MW-202 60
W-12
W-13
W-4
W-11
W-1
MW-10 0.5U
W-8
MW-9 5
MW-1 0.5U
MW-2 120
MW-5 30
MW-8 6.1
W-2
MW-4 0.5U
MW-211M 2.2
MW-203 28
MW-7 0.5U
MW-6 0.73
MW-11 0.5U
MW-38 0.5U
UPRR
Loup River
Woodland Drive
Mahood
26th St.
25th St.
22nd St.
21st St.
19th St.
18th St.
17th St.
16th St.
15th St.
14th St.
13th St.
12th
11th St.
10th St.
9th St.
8th St.
7th St.
6th St.
5th St.
4th St.
3rd St.
32nd Ave
31st Ave
30th Ave
29th Ave
28th Ave
27th Ave
26th Ave
25th Ave
24th Ave
23rd Ave
22nd Ave
21st Ave
20th Ave
19th Ave
18th Ave
17th Ave
16th Ave
15th Ave
14th Ave
13th Ave
12th Ave
11th Ave
N
0
400
800
1600
SCALE IN FEET
Notes:
*Data from MW-23B and MW-31B are shown on the Middle Aquifer plume maps due to the deeper screened interval of these wells.
Legend
70 - 500 ug/L
Municipal Well Location
Monitoring Well Nests
Extraction Well Location
FMGP Monitoring Well Location
Source Area
Non Site-related Source Area
U Undetected above the stated reporting limit
39 ug/L cis-1,2-DCE at 'B' Level Wells
NA Not Applicable
J Estimated
Filename: Y:\...\GETS-PSR-2009\Fig2-15_Bseries-cis.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR
HGL HydroGeoLogic, Inc
CDM
Figure 2.15
"B" Level Wells
cis-1,2-DCE Plume
Shallow Aquifer
October 2009
Y:\CAD\Tenth\GETS-PSR-2009\Fig2-15_Bseries-cis.dwg 03-29-10 16:19



Notes:
*Data from MW-23B and MW-31B are shown on the Middle Aquifer plume maps due to the deeper screened interval of these wells.

Filename: Y:\...\GETS-PSR-2009\Fig2-16_CseriesPCE.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

Legend

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- Non Site-related Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L PCE at 'C' Level Wells
- NA — Not Applicable
- J — Estimated

5 - 100 ug/L

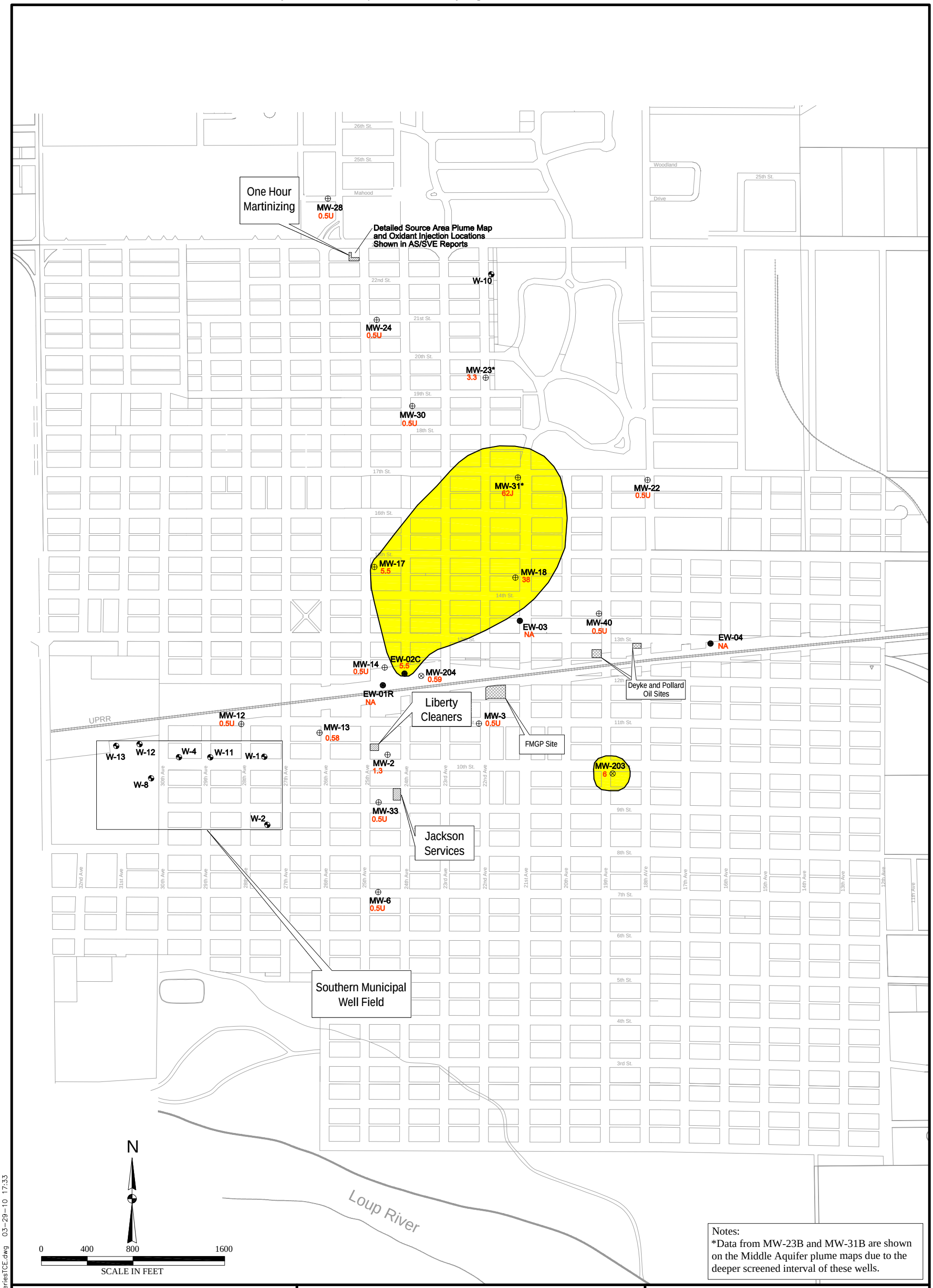
HydroGeoLogic, Inc

CDM

Figure 2.16

"C" Level Wells PCE Plume Middle Aquifer October 2009

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-16_CseriesPCE.dwg 03-29-10 17:27



Notes:
*Data from MW-23B and MW-31B are shown on the Middle Aquifer plume maps due to the deeper screened interval of these wells.

Filename: Y:\...\GETS-PSR-2009\Fig2-17_CseriesTCE.dwg
Task Order Number: 3370-002
Revised: 3/29/10 KBR

Legend

- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- Non Site-related Source Area
- U — Undetected above the stated reporting limit
- 39 — ug/L TCE at 'C' Level Wells
- NA — Not Applicable
- J — Estimated

5 - 100 ug/L

HGL HydroGeoLogic, Inc

CDM

Figure 2.17

"C" Level Wells TCE Plume Middle Aquifer October 2009

Y:\CAD\Tenth\GETS-PSR-2009\Fig2-17_CseriesTCE.dwg 03-29-10 17:33

Appendix A

Operations and Maintenance Monitoring Checklists

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**01/01/09**
Time:	**10:00 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**197**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1406**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**484**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1406**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**147**	gpm	150	
EW-03 Water Level	MMI EW-03	**1422**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1408**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**320**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**30**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.379**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**8.5**	Inches/Period	varies	
Total flow rate	FIT-200	**1619**	gpm	1,400	
Totalized flow rate	FIT-200	**2558585**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**103**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1562**	gpm	1,250	
Totalized flow rate	F1T-201	**2648485**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

Date: 01/01/09

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**37**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**1534068**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1536**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**464085**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**0.77**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.22**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NO**	NTU	Time Reading Taken	**7:23 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**7.65**		N	
pH of water sent to city WTP	pH	**0.9**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.05**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.9**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.1**	Inches of water	Varies	**2.5 + 3.6**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4320647 EW 2 - 4390234 EW 3 - 56212 EW 4 - DOWN DUE TO METER**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**01/09/09**
Time:	**2:35 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**197**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1406**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**484**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1406**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**148**	gpm	150	
EW-03 Water Level	MMI EW-03	**1421**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1408**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**320**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**40**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.244**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**6.25**	Inches/Period	varies	**8 Days**
Total flow rate	FIT-200	**1620**	gpm	1,400	
Totalized flow rate	FIT-200	**2579822**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1622**	gpm	1,250	
Totalized flow rate	F1T-201	**2669469**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

Date: 01/09/09

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**37**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203		gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1543451**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1505**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**474200**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.18**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**1.16**	NTU	Time Reading Taken	**7:23 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NO**		N	
pH of water sent to city WTP	pH	**7.18**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.04**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.6**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.5**	Inches of water	Varies	**2.8 + 3.7**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4346367 EW 2 - 4453412 EW 3 - 581470 EW 4 - NR METER OUT FOR REPAIR**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**01/15/09**
Time:	**9:00 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**193**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1406**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**478**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1406**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**151**	gpm	150	
EW-03 Water Level	MMI EW-03	**1421**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1408**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**75**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**60**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.338**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**3.25**	Inches/Period	varies	
Total flow rate	FIT-200	**1610**	gpm	1,400	
Totalized flow rate	FIT-200	**2593150**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1628**	gpm	1,250	
Totalized flow rate	F1T-201	**2682925**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

Date: 01/15/09

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**37**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1548600**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1504**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**481326**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port		NTU	<1	
Turbidity of water to city WTP	Turbidity	**1.04**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NO**		N	
pH of water sent to city WTP	pH	**7.18**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.06**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**6**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**4.9**	Inches of water	Varies	**1.9 + 3.0**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4362491 EW 2 - 4493166 EW 3 - 593768 EW 4 - REPAIR**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**01/22/09**
Time:	**1:25 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**194**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1407**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**479**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1407**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**152**	gpm	150	
EW-03 Water Level	MMI EW-03	**1421**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1408**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**75**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**60**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.39**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**8.75**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1609**	gpm	1,400	
Totalized flow rate	FIT-200	**2609759**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**97**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1631**	gpm	1,250	
Totalized flow rate	F1T-201	**2699751**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

GET System Weekly Monitoring Checklist

20th Street OU2 Superfund Site

Date: 01/22/09

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**37**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1554362**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1509**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**490943**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.13**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.29**	NTU	Time Reading Taken	**2:45 PM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NO**		N	
pH of water sent to city WTP	pH	**7.5**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.1**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.4**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.2**	Inches of water	Varies	**2.8 + 3.4**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4382667 EW 2 - 4542921 EW 3 - 609441 EW 4 - REPAIR**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**01/30/09**
Time:	**9:48 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**193**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1406**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**477**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1406**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**150**	gpm	150	
EW-03 Water Level	MMI EW-03	**1421**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1408**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**75**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**60**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.357**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**8**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1598**	gpm	1,400	
Totalized flow rate	FIT-200	**2627777**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1554**	gpm	1,250	
Totalized flow rate	F1T-201	**2717569**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**94**	Inches	89 – 91	

				Date:	
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**0**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**1468**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1561084**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**0**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**500953**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port		NTU	<1	
Turbidity of water to city WTP	Turbidity	**NO**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line			N	
pH of water sent to city WTP	pH		pH units	7	
Turbidity of water to storm sewer	Turbidity	**1.87**	NTU	Varies	
pH of water to storm sewer	pH	**7.05**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.08**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.4**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.04**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.6**	Inches of water	Varies	**2.4 + 3.2**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4404326** **EW 2 - 4596254** **EW 3 - 626418** **EW 4 - REPAIR**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**02/05/09**
Time:	**10:00 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**193**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1406**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**478**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1406**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**153**	gpm	150	
EW-03 Water Level	MMI EW-03	**1421**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1408**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**78**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**60**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.429**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**8.25**	Inches/Period	varies	
Total flow rate	FIT-200	**1590**	gpm	1,400	
Totalized flow rate	FIT-200	**2641475**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1543**	gpm	1,250	
Totalized flow rate	F1T-201	**2730925**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**68**	Inches	89 – 91	

				Date:	**02/05/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**38**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203		gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1566706**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1464**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**508084**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**2.99**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.99**	NTU	Time Reading Taken	**7:00 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NO**		N	
pH of water sent to city WTP	pH	**7.36**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.1**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.6**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.3**	Inches of water	Varies	
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4421012**	**EW 2 - 4637377**	**EW 3 - 639674**	**EW 4 - OUT FOR REPAIR**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**02/12/09**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

				Date:	**02/12/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**PLANT DOWN DUE TO ACID WASH**				

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10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**02/19/09**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

				Date:	**02/19/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**PLANT DOWN DUE TO MOVING WATER LINE NORTH OF RR TRACKS**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**02/26/09**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**68**	Inches	89 – 91	

				Date:	**02/26/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**PLANT DOWN DUE TO MOVING WATER LINE NORTH OF RR TRACKS**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**3/5/2009**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

				Date:	
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**PLANT DOWN DUE TO MOVING WATER LINE NORTH OF RR TRACKS**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**3/12/2009**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	(use calibration column)
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

Date: 3/12/2009

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	>0.25 replace filters
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	>8.0 air stripper may need acid cleaning
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	PLANT DOWN DUE TO MOVING WATER LINE NORTH OF RR TRACKS				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**3/19/2009**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	(use calibration column)
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

				Date:	**3/19/2009**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	>0.25 replace filters
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	>8.0 air stripper may need acid cleaning
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	PLANT DOWN DUE TO MOVING WATER LINE NORTH OF RR TRACKS				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**3/26/2009**
Time:	**10:09 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**194**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1407**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**503**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1405**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**138**	gpm	150	
EW-03 Water Level	MMI EW-03	**1423**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1410**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**75**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**60**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	(use calibration column)
Bio-dispersant dose	Calculated	**0.421**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**13.5**	Inches/Period	varies	10 Days
Total flow rate	FIT-200	**1603**	gpm	1,400	
Totalized flow rate	FIT-200	**2675681**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1506**	gpm	1,250	
Totalized flow rate	F1T-201	**2762815**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**66**	Inches	89 – 91	

				Date:	**3/26/2009**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**38**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1599898**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1493**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**513060**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.13**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**1.08**	NTU	Time Reading Taken	7:40 AM
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.27**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.14**	Inches of water	0.04	>0.25 replace filters
Dwyer differential pressure gauge	Photohelic Gauge	**5.8**	Inches of water	6	>8.0 air stripper may need acid cleaning
Differential pressure gauge	Magnehelic Gauge	**0.35**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.5**	Inches of water	Varies	2.7 + 3.7
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	EW 1 - 4468602 EW 2 - 4749005 EW 3 - 673872 EW 4 - 1823950				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**04/02/09**
Time:	**9:10 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**194**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1406**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**501**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1405**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**134**	gpm	150	
EW-03 Water Level	MMI EW-03	**1423**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**825**	gpm	150	
EW-04 Water Level	MMI EW-04	**1410**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**60**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**75**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.298**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**10.5**	Inches/Period	varies	
Total flow rate	FIT-200	**1584**	gpm	1,400	
Totalized flow rate	FIT-200	**2691573**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**105**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1506**	gpm	1,250	
Totalized flow rate	F1T-201	**2777914**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**04/02/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**37**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203		gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1606159**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1481**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**521501**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port		NTU	<1	
Turbidity of water to city WTP	Turbidity	**1.23**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.5**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.12**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.6**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.3**	Inches of water	Varies	**2.6 + 3.7**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:					

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**04/09/09**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

				Date:	
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**Superfund plant not running**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**04/17/09**
Time:	**2:30 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**192**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1407**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**500**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1406**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**135**	gpm	150	
EW-03 Water Level	MMI EW-03	**1424**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**825**	gpm	150	
EW-04 Water Level	MMI EW-04	**1411**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**75**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**60**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.292**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**7.5**	Inches/Period	varies	**8 days**
Total flow rate	FIT-200	**1578**	gpm	1,400	
Totalized flow rate	FIT-200	**2717171**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**107**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1452**	gpm	1,250	
Totalized flow rate	F1T-201	**2801796**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**60**	Inches	89 – 91	

				Date:	**04/17/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**38**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203		gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1617058**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1497**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**534317**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.42**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.27**	NTU	Time Reading Taken	**6:55 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.3**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.14**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.4**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.8**	Inches of water	Varies	**2.6 + 3.2**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1- 4519046 EW 2 - 4879484 EW 3 - 709215 EW 4 - 1823950**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**04/23/09**
Time:	**12:10 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**192**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1406**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**499**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1406**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**134**	gpm	150	
EW-03 Water Level	MMI EW-03	**1423**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1411**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**320**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.247**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**4.75**	Inches/Period	varies	**6 days**
Total flow rate	FIT-200	**1573**	gpm	1,400	
Totalized flow rate	FIT-200	**2730466**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**106**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1442**	gpm	1,250	
Totalized flow rate	F1T-201	**2814067**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

GET System Weekly Monitoring Checklist

20th Street OU2 Superfund Site

				Date:	**04/23/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**37**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1622161**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1429**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**541547**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.96**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.57**	NTU	Time Reading Taken	**6:55 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.16**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.2**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.2**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.2**	Inches of water	Varies	**2.6 + 3.6**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4535419**	**EW 2 - 4921955**	**EW 3 - 728742**	**EW 4 - 1823950**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**05/01/09**
Time:	**11:30 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**186**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1406**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**501**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1405**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**136**	gpm	150	
EW-03 Water Level	MMI EW-03	**1423**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1411**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**75**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**60**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.234**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**6**	Inches/Period	varies	**8 Days**
Total flow rate	FIT-200	**1538**	gpm	1,400	
Totalized flow rate	FIT-200	**2747750**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1418**	gpm	1,250	
Totalized flow rate	F1T-201	**2830061**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**92**	Inches	89 – 91	

GET System Weekly Monitoring Checklist

20th Street OU2 Superfund Site

				Date:	**05/01/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**0**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**1428**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1627312**	gal	X 1,000	
Flow rate to city WTP	FIT-202		gpm	Varies	
Totalized Flow to city WTP	FIT-202	**552406**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port		NTU	<1	
Turbidity of water to city WTP	Turbidity		NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH		pH units	7	
Turbidity of water to storm sewer	Turbidity	**0.47**	NTU	Varies	
pH of water to storm sewer	pH	**7.27**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.18**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.4**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.5**	Inches of water	Varies	**2.7 + 3.8**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4557382**	**EW 2 - 4980103**	**EW 3 - 737584**	**EW 4 - 1823950**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**05/08/09**
Time:	**2:00 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**183**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1407**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**500**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1405**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**137**	gpm	150	
EW-03 Water Level	MMI EW-03	**1423**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1411**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**75**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**60**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.257**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**5.75**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1533**	gpm	1,400	
Totalized flow rate	FIT-200	**2763368**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1407**	gpm	1,250	
Totalized flow rate	F1T-201	**2844539**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**05/08/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**36**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203		gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1630743**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1416**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**563466**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.19**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.33**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.24**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.2**		0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.2**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.8**	Inches of water	Varies	**2.3 + 3.5**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4576028**	**EW 2 - 5030177**	**EW 3 - 751370**	**EW 4 - 1823950**	

*NR = Not Running

				Date:	**05/15/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**35**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1632904**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1406**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**575357**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.15**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.39**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NO**		N	
pH of water sent to city WTP	pH	**7.62**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.05**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.2**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.35**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.5**	Inches of water	Varies	**3.4 + 3.1**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4594750**	**EW 2 - 5080871**	**EW 33 - 765501**	**EW 4 - 1823950**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**05/22/09**
Time:	**2:25 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**184**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1407**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**496**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1403**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**138**	gpm	150	
EW-03 Water Level	MMI EW-03	**1423**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1411**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.245**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**5.5**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1529**	gpm	1,400	
Totalized flow rate	FIT-200	**2794135**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**53**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1377**	gpm	1,250	
Totalized flow rate	F1T-201	**2872567**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

Date: 05/22/09

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**35**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1633844**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1385**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**588539**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.07**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.39**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NO**		N	
pH of water sent to city WTP	pH	**7.47**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.12**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.2**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.35**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6**	Inches of water	Varies	**2.4 + 3.6**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4613533**	**EW 2 - 5131501**	**EW 3 - 779690**	**EW 4 - 1823950**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**06/05/09**
Time:	**Plant did not run**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

				Date:	
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**plant did not run**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**06/12/09**
Time:	**plant did not run**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

Date:

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**Plant did not run**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**06/19/09**
Time:	**plant did not run**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

				Date:	
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**Plant did not run**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**06/26/09**
Time:	**plant did not run**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

				Date:	
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**Plant did not run**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**6/29-7/3/2009**
Time:	**plant did not run**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

				Date:	
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**Plant did not run**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**07/09/09**
Time:	**8:35 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**189**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1410**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**503**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1403**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**134**	gpm	150	
EW-03 Water Level	MMI EW-03	**1424**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**0**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.357**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**8**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1465**	gpm	1,400	
Totalized flow rate	FIT-200	**2824108**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**51**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1248**	gpm	1,250	
Totalized flow rate	F1T-201	**2899367**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**05/15/09**
Time:	**12:45 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**186**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1407**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**502**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1405**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**140**	gpm	150	
EW-03 Water Level	MMI EW-03	**1423**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1411**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.245**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**5.5**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1548**	gpm	1,400	
Totalized flow rate	FIT-200	**2778569**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1391**	gpm	1,250	
Totalized flow rate	F1T-201	**2858571**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**07/09/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**37**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1641204**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1318**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**608379**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.97**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**2.01**	NTU	Time Reading Taken	**7:00 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.3**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.16**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**4.8**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.35**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.5**	Inches of water	Varies	**2.2 + 3.3**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4650716** **EW 2 - 5230729** **EW 3 - 807502** **EW 4 - NR**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**07/16/09**
Time:	**11:10 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**187**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1409**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**505**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1404**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**127**	gpm	150	
EW-03 Water Level	MMI EW-03	**1424**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1431**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.279**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**6.25**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1487**	gpm	1,400	
Totalized flow rate	FIT-200	**2839094**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**52**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1271**	gpm	1,250	
Totalized flow rate	F1T-201	**2912309**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**07/16/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**34**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1641293**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1306**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**621754**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.53**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**1.57**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.11**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.18**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.2**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.35**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.6**	Inches of water	Varies	**2.4 + 3.2**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1- 4669907 EW 2 - 5282151 EW 3 - 820802 EW 4 - NR**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**07/23/09**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

Date:

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:					

*NR = Not Running

Plant not running.

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**07/31/09**
Time:	**10:30 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**187**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1409**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**505**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1403**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**120**	gpm	150	
EW-03 Water Level	MMI EW-03	**1424**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1431**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.276**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**13.25**	Inches/Period	varies	**15 Days**
Total flow rate	FIT-200	**1458**	gpm	1,400	
Totalized flow rate	FIT-200	**2869625**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**52**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1262**	gpm	1,250	
Totalized flow rate	F1T-201	**2938613**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**07/31/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**37**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1642484**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1271**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**647749**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.32**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.44**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NO**		N	
pH of water sent to city WTP	pH	**7.29**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
NR					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.2**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.2**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6**	Inches of water	Varies	**2.5 + 3.5**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4708932**	**EW 2 - 5387311**	**EW 3 - 846879**	**EW 4 - NR**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**08/06/09**
Time:	**1:15 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**187**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1408**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**506**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1403**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**119**	gpm	150	
EW-03 Water Level	MMI EW-03	**1424**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1431**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.26**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**5**	Inches/Period	varies	**6 Days**
Total flow rate	FIT-200	**1456**	gpm	1,400	
Totalized flow rate	FIT-200	**2882451**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**52**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1239**	gpm	1,250	
Totalized flow rate	F1T-201	**2949600**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**55**	Inches	89 – 91	

				Date:	**08/06/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**37**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1642797**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1286**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**658787**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.11**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.87**	NTU	Time Reading Taken	**7:40 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.41**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.2**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.35**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.7**	Inches of water	Varies	**2.3 + 3.4**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4725541 EW 2 - 5432009 EW 3 - 857455 EW 4 - NR**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**08/13/09**
Time:	**11:50 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**187**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1409**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**501**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1404**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**170**	gpm	150	
EW-03 Water Level	MMI EW-03	**1421**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1431**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.245**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**5.5**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1498**	gpm	1,400	
Totalized flow rate	FIT-200	**2894911**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**53**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1281**	gpm	1,250	
Totalized flow rate	F1T-201	**2960332**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**08/13/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**37**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1643327**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1318**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**669269**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.15**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.72**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.42**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.1**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.2**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6**	Inches of water	Varies	**2.6 + 3.4**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 -4743736 EW 2 - 5480813 EW 3 - 869433 EW 4 - NR**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**08/20/09**
Time:	**2:35 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**186**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1408**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**502**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1404**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**171**	gpm	150	
EW-03 Water Level	MMI EW-03	**1421**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1431**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.29**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**6.5**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1506**	gpm	1,400	
Totalized flow rate	FIT-200	**2910175**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**53**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1318**	gpm	1,250	
Totalized flow rate	F1T-201	**2973633**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**92**	Inches	89 – 91	

				Date:	**08/20/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**0**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**1353**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1645037**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**0**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**681100**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**7.17**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NR**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NO**		N	
pH of water sent to city WTP	pH	**NR**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**0.73**	NTU	Varies	
pH of water to storm sewer	pH	**0.27**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.04**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.4**	Inches of water	Varies	**2.1 + 3.3**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4760630**	**EW 2 - 5525954**	**EW 3 - 884961**	**EW 4 - nr**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**08/27/09**
Time:	**12:10 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**189**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1408**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**500**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1404**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**170**	gpm	150	
EW-03 Water Level	MMI EW-03	**1421**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1431**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.279**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**6.25**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1502**	gpm	1,400	
Totalized flow rate	FIT-200	**2925013**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**53**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1328**	gpm	1,250	
Totalized flow rate	F1T-201	**2986768**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

Date: 08/27/09

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**35**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1645848**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1326**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**693425**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.25**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.7**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.3**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.04**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**0.05**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.5**	Inches of water	Varies	
Damper Position	Handle on Fan	**100**	Percent Open	100	**2.0 + 3.5**
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4779294** **EW 2 - 5575522** **EW 3 -902236** **EW 4 - NR**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**09/04/09**
Time:	**9:40 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**192**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1409**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**502**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1404**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**175**	gpm	150	
EW-03 Water Level	MMI EW-03	**1420**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04		FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.254**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**6.5**	Inches/Period	varies	
Total flow rate	FIT-200	**1503**	gpm	1,400	
Totalized flow rate	FIT-200	**2941890**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**53**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1344**	gpm	1,250	
Totalized flow rate	F1T-201	**3001829**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**09/04/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**35**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1646884**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1325**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**707235**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.84**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.54**	NTU	Time Reading Taken	**7:20 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.32**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.1**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.2**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.8**	Inches of water	Varies	**2.4 + 3.4**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4800917 EW 2 - 5632179 EW 3 - 921784 EW 4 - 0**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**09/11/09**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

				Date:	
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:					

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**09/17/09**
Time:	**2:25 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**195**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1408**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**498**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1402**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**179**	gpm	150	
EW-03 Water Level	MMI EW-03	**1420**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1430**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.288**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**12**	Inches/Period	varies	**13 Days**
Total flow rate	FIT-200	**1469**	gpm	1,400	
Totalized flow rate	FIT-200	**2970172**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**53**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1306**	gpm	1,250	
Totalized flow rate	F1T-201	**3026866**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**09/17/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**35**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1648175**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1293**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**729836**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.36**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.42**	NTU	Time Reading Taken	**8:00 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.41**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.12**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.2**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.1**	Inches of water	Varies	**2.5 + 3.6**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4837777 EW 2 - 5726646 EW 3 -955506 EW 4 - 0**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**09/25/09**
Time:	**10:30 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**198**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1408**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**501**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1403**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**178**	gpm	150	
EW-03 Water Level	MMI EW-03	**1419**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1430**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.263**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**6.75**	Inches/Period	varies	**8 Days**
Total flow rate	FIT-200	**1494**	gpm	1,400	
Totalized flow rate	FIT-200	**2986818**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**53**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1353**	gpm	1,250	
Totalized flow rate	F1T-201	**3041842**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**09/25/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**35**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1651262**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1295**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**743350**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.75**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.64**	NTU	Time Reading Taken	**9:25 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.54**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.1**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.3**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.9**	Inches of water	Varies	**2.5 + 3.4**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**ew 1 - 4859977 EW 2 - 5782541 EW 3 - 975574 EW 4 - 0**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**10/02/09**
Time:	**1:30 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**198**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1408**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**494**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1403**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**164**	gpm	150	
EW-03 Water Level	MMI EW-03	**1420**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1410**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.267**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**6**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1549**	gpm	1,400	
Totalized flow rate	FIT-200	**3002409**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**98**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1434**	gpm	1,250	
Totalized flow rate	F1T-201	**3056090**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

GET System Weekly Monitoring Checklist

20th Street OU2 Superfund Site

				Date:	**10/02/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**36**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203		gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1651626**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1350**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**755609**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**1.32**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**1.95**	NTU	Time Reading Taken	**6:55 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.26**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.2**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.4**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.6**	Inches of water	Varies	**2.5 + 5.1**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4880266**	**EW 2 - 5833150**	**EW 3 - 992983**	**EW 4 - down**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**10/09/09**
Time:	**11:00 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**199**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1408**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**494**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1403**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**164**	gpm	150	
EW-03 Water Level	MMI EW-03	**1420**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1410**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.234**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**5.25**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1540**	gpm	1,400	
Totalized flow rate	FIT-200	**3017640**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1435**	gpm	1,250	
Totalized flow rate	F1T-201	**3070273**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**10/09/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**36**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203		gpm	Varies	
Totalized flow to storm sewer	FIT-203		gal	X 1,000	
Flow rate to city WTP	FIT-202	**1339**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**766232**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**1.70**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**1.52**	NTU	Time Reading Taken	**6:55 AM**
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.33**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.2**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.6**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.5**	Inches of water	Varies	**2.8 + 3.6**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4899897**	**EW 2 - 5881713**	**EW 3 - 1009150**	**EW 4 - NA**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**10/16/09**
Time:	**1:00 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**201**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1409**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**490**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1402**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**160**	gpm	150	
EW-03 Water Level	MMI EW-03	**1420**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1409**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.246**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**5.5**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1544**	gpm	1,400	
Totalized flow rate	FIT-200	**3031788**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**102**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1455**	gpm	1,250	
Totalized flow rate	F1T-201	**3083480**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**75**	Inches	89 – 91	

GET System Weekly Monitoring Checklist

20th Street OU2 Superfund Site

Date: 10/16/009

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**37**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203		gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1659713**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1434**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**773181**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.84**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**2.3**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.42**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.08**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.6**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.1**	Inches of water	Varies	**1.7 + 3.4**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 5927365** **EW 2 - 4918459** **EW 3 - 1024564** **EW 4 - NA**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**10/31/09**
Time:	**10:00 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**202**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1408**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**492**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1403**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**176**	gpm	150	
EW-03 Water Level	MMI EW-03	**1419**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1422**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**8.75**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**8.75**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1519**	gpm	1,400	
Totalized flow rate	FIT-200	**3059776**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1426**	gpm	1,250	
Totalized flow rate	F1T-201	**3109955**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**10/31/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**34**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203		gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1675392**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1314**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**782397**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.36**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.48**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.21**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.08**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.4**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.5**	Inches of water	Varies	
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4961317** **EW 2 - 6032052** **EW 3 - 1060238** **EW 4 - NA**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**11/05/09**
Time:	**9:10 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**201**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1408**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**491**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1403**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**177**	gpm	150	
EW-03 Water Level	MMI EW-03	**1419**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1422**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.281**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**4.5**	Inches/Period	varies	**5 Days**
Total flow rate	FIT-200	**1510**	gpm	1,400	
Totalized flow rate	FIT-200	**3070611**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1422**	gpm	1,250	
Totalized flow rate	F1T-201	**3120163**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**49**	Inches	89 – 91	

				Date:	**11/05/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**35**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**OK**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1679128**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1270**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**788113**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.38**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.8**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NO**		N	
pH of water sent to city WTP	pH	**7.2**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.1**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.4**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.3**	Inches of water	Varies	**2.7 + 3.6**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4969810**	**EW 2 - 6052884**	**EW 3 - 1067642**	**EW 4 - 0**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**11/12/09**
Time:	**9:25 AM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**201**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1408**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**492**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1402**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**177**	gpm	150	
EW-03 Water Level	MMI EW-03	**1419**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1422**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.267**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**6**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1513**	gpm	1,400	
Totalized flow rate	FIT-200	**3085779**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**96**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1425**	gpm	1,250	
Totalized flow rate	F1T-201	**3134439**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

GET System Weekly Monitoring Checklist

20th Street OU2 Superfund Site

				Date:	**11/12/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**34**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**16836221**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1311**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**794257**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.25**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.69**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.32**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.12**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.2**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.8**	Inches of water	Varies	**2.4 + 3.4**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 4990107**	**EW 2 - 6102695**	**EW 3 - 1085305**	**EW 4 - 0**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**11/19/09**
Time:	**3:25 PM**

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**200**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1409**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**490**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1403**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**233**	gpm	150	
EW-03 Water Level	MMI EW-03	**1416**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**0**	gpm	150	
EW-04 Water Level	MMI EW-04	**1422**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.267**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**6"**	Inches/Period	varies	**7 Days**
Total flow rate	FIT-200	**1633**	gpm	1,400	
Totalized flow rate	FIT-200	**3101530**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**112**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1331**	gpm	1,250	
Totalized flow rate	F1T-201	**3148413**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**52**	Inches	89 – 91	

GET System Weekly Monitoring Checklist

20th Street OU2 Superfund Site

				Date:	**11/19/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**34**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1692133**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1316**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**802068**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**0.27**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.48**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**No**		N	
pH of water sent to city WTP	pH	**7.31**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.12**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**0.054**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**5.8**	Inches of water	Varies	**2.5 + 3.3**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 5011034 EW 2- 6153895 EW 3 - 1105190 EW 4 - 0**				

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**11/25/09**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**200**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1409**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**487**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1401**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**233**	gpm	150	
EW-03 Water Level	MMI EW-03	**1415**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1422**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.261**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**5"**	Inches/Period	varies	**6 Days**
Total flow rate	FIT-200	**1508**	gpm	1,400	
Totalized flow rate	FIT-200	**3114525**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**107**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1328**	gpm	1,250	
Totalized flow rate	F1T-201	**3159763**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

				Date:	**11/25/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**35**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**0**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1697273**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1305**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**808292**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**1.16**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.81**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH	**7.58**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NR**	NTU	Varies	
pH of water to storm sewer	pH	**NR**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.1**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.4**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.3**	Inches of water	Varies	**2.6 + 3.7**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:					

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**12/04/09**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**199**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1409**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**484**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1402**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**230**	gpm	150	
EW-03 Water Level	MMI EW-03	**1415**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1422**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.260**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**7.5**	Inches/Period	varies	**9 Days**
Total flow rate	FIT-200	**1530**	gpm	1,400	
Totalized flow rate	FIT-200	**3133950**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**117**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1330**	gpm	1,250	
Totalized flow rate	F1T-201	**3176777**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**91**	Inches	89 – 91	

				Date:	**12/04/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**0**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**1349**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1707914**	gal	X 1,000	
Flow rate to city WTP	FIT-202		gpm	Varies	
Totalized Flow to city WTP	FIT-202	**814607**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**1.59**	NTU	<1	
Turbidity of water to city WTP	Turbidity		NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**no**		N	
pH of water sent to city WTP	pH		pH units	7	
Turbidity of water to storm sewer	Turbidity	**1.06**	NTU	Varies	
pH of water to storm sewer	pH	**7.3**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.06**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.6**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.3**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.5**	Inches of water	Varies	**2.7 + 3.8**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 5053750**	**EW 2 - 6257553**	**EW 3 - 1154306**	**EW 4 - 0**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**12/17/09**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**200**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**1410**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**483**	gpm	500	
EW-02C Water Level	MMI EW-02C	**1402**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**229**	gpm	150	
EW-03 Water Level	MMI EW-03	**1415**	FT amsl	varies	
EW-04 Flow meter	FIT-104		gpm	150	
EW-04 Water Level	MMI EW-04	**1422**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**300**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**20**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station		Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**0.252**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**10.5**	Inches/Period	varies	
Total flow rate	FIT-200	**1499**	gpm	1,400	
Totalized flow rate	FIT-200	**3162077**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**110**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**54**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**1352**	gpm	1,250	
Totalized flow rate	F1T-201	**3201733**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**51**	Inches	89 – 91	

GET System Weekly Monitoring Checklist

20th Street OU2 Superfund Site

				Date:	**12/17/09**
Monitoring Point Description	**Point**	**Reading**	**Units**	**Expected Reading**	**Comments**
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**34**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**ok**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203		gpm	Varies	
Totalized flow to storm sewer	FIT-203	**1719814**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**1294**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**827049**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port		NTU	<1	
Turbidity of water to city WTP	Turbidity	**0.6**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**N**		N	
pH of water sent to city WTP	pH	**7.55**	pH units	7	
Turbidity of water to storm sewer	Turbidity		NTU	Varies	
pH of water to storm sewer	pH		pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**0.10**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**5.8**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**0.4**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**6.7**	Inches of water	Varies	**2.8 + 3.9**
Damper Position	Handle on Fan	**100**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**EW 1 - 5093847**	**EW 2 - 6354163**	**EW 3 - 1200106**	**EW 4 - 0**	

*NR = Not Running

10th Street OU2 Superfund Site
Groundwater Extraction and Treatment System
Weekly Monitoring Checklist

Name:	
Date:	**12/30/09**
Time:	

Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
WELL PUMPS					
EW-01R Flow meter	FIT-101	**NA**	gpm	200	
EW-01R Water Level	MM1 EW-01 R	**NA**	FT amsl	varies	
EW-02C Flow meter	FIT-102	**NA**	gpm	500	
EW-02C Water Level	MMI EW-02C	**NA**	FT amsl	varies	
EW-03 Flow meter	FIT-103	**NA**	gpm	150	
EW-03 Water Level	MMI EW-03	**NA**	FT amsl	varies	
EW-04 Flow meter	FIT-104	**NA**	gpm	150	
EW-04 Water Level	MMI EW-04	**NA**	FT amsl	varies	
SEQUESTERANT CHEMICAL FEED SYSTEM					
Neptune pump speed	Pump Speed	**NA**	Strokes Per Minute	varies	
Neptune pump stroke length	Puma Dial	**NA**	% Stroke Length	52%	
Bio-dispersant flow rate	Pump Station	**NA**	Gal. Per Hour	0.3	**(use calibration column)**
Bio-dispersant dose	Calculated	**NA**	ppm	4	
Bio-dispersant used this period	Indicated on Totes	**NA**	Inches/Period	varies	
Total flow rate	FIT-200	**NA**	gpm	1,400	
Totalized flow rate	FIT-200	**NA**	gal	X 1,000	
EQUALIZATION TANK TO AIR STRIPPER					
Liquid level in T-1	MMI T-1 Diagram	**NA**	Inches	96	
Pump P-1 Speed	MMI P-1 Diagram	**NA**	HZ	39-48	
Pump P-1 Oil level	P-1 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to air stripper	FIT-201	**NA**	gpm	1,250	
Totalized flow rate	F1T-201	**NA**	gal	X 1,000	
Water level in air stripper	MMI Stripper Diagram	**NA**	Inches	89 – 91	

Date: 12/30/09

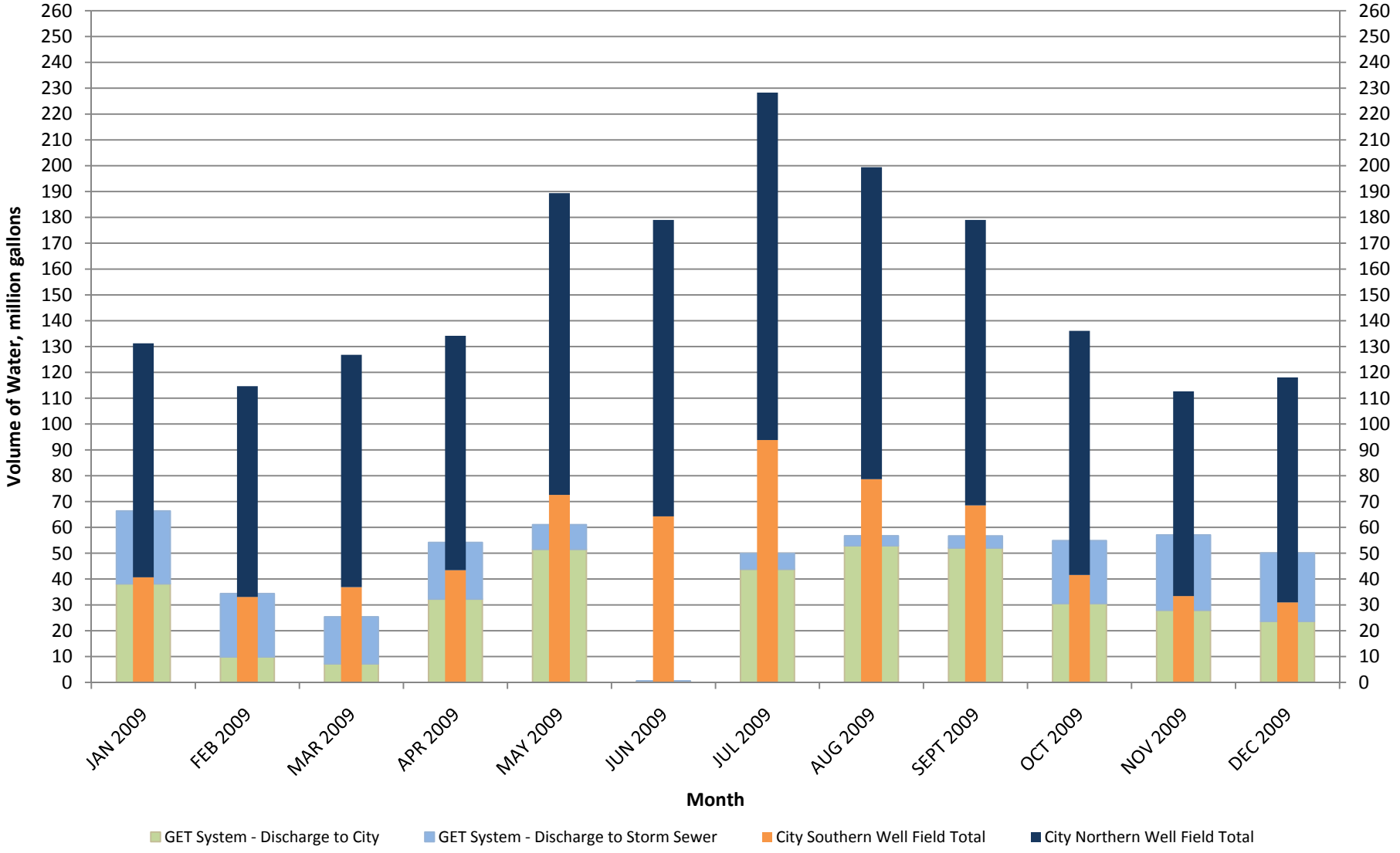
Monitoring Point Description	Point	Reading	Units	Expected Reading	Comments
FLOW TO STORM SEWER/CITY					
Pump P-2 speed	P-2	**NA**	HZ	Varies	
Pump P-2 oil level	P-2 Oil Sight Glass	**NA**		Center of Sight Glass	
Flow rate to storm sewer	FIT-203	**NA**	gpm	Varies	
Totalized flow to storm sewer	FIT-203	**NA**	gal	X 1,000	
Flow rate to city WTP	FIT-202	**NA**	gpm	Varies	
Totalized Flow to city WTP	FIT-202	**NA**	gal	X 1,000	
Turbidity of water at P-1	P-1 Sample Port	**NA**	NTU	<1	
Turbidity of water to city WTP	Turbidity	**NA**	NTU	Time Reading Taken	
Turbidity meter displaying any messages? (Y / N)	Turbidity Meter City Line	**NA**		N	
pH of water sent to city WTP	pH	**NA**	pH units	7	
Turbidity of water to storm sewer	Turbidity	**NA**	NTU	Varies	
pH of water to storm sewer	pH	**NA**	pH units	7.00	
FAN					
Differential pressure on filter housing (outside)	Outside Filter Housing	**NA**	Inches of water	0.04	**>0.25 replace filters**
Dwyer differential pressure gauge	Photohelic Gauge	**NA**	Inches of water	6	**>8.0 air stripper may need acid cleaning**
Differential pressure gauge	Magnehelic Gauge	**NA**	Inches of water	0.5	
Hand Held	Tubes leading to Photo	**NA**	Inches of water	Varies	
Damper Position	Handle on Fan	**NA**	Percent Open	100	
Additional Sampling Results:					
Site Visitors:					
Shipments Received:					
Maintenance Performed:					
Additional Comments:	**Plant down due to broken pipe outside of stripper P - 3 8" pipe**				

*NR = Not Running

Appendix B

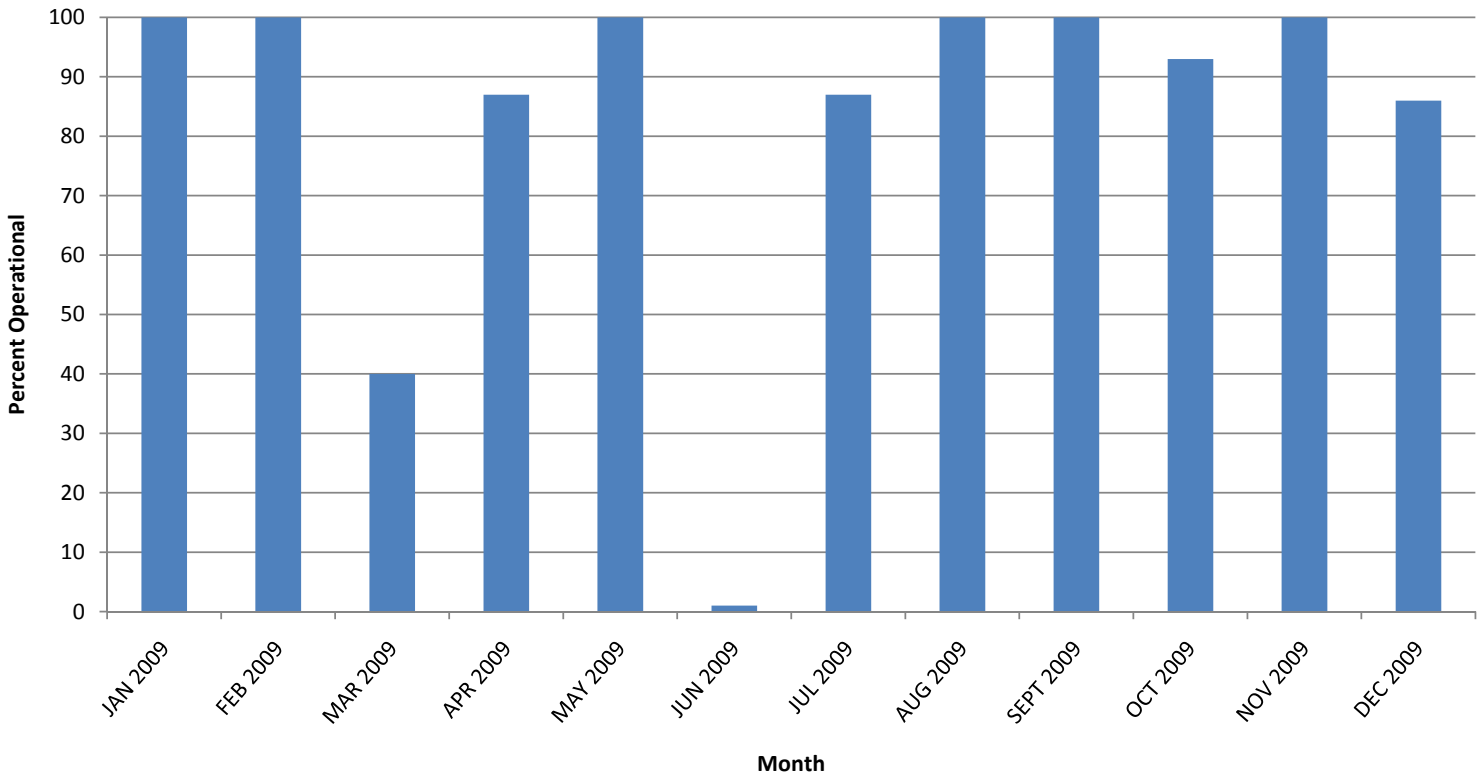
Operational Graphs

Figure B-1
GET System Contribution to City Water Supply



Note: City southern well field total includes that portion from the GET System.

Figure B-2
GET System Monthly Operational Percentage



Appendix C

AQ 5010 MSDS

Aqua - Pure

Product Name: AQ 5010
Created: 3-25-09

SECTION I PRODUCT AND COMPANY IDENTIFICATION

Chemical Name:	**Catalyzed Phosphate**.
Synonyms:	Sequestrant/Corrosion Control
Manufacturer:	AQUA-PURE INC
Address:	716 N HELEN AVE.
City, State, Zip:	SIOUX FALLS, SD 57104
MSDS Prepared By:	Daisy Dusek
Date Prepared:	3-25-09
Emergency Phone:	CHEMTREC **(800) 424-9300**

HMIS CODE

Health	1
Flammability	0
Reactivity	0

SECTION II – HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

There are no Listed Hazardous Materials in this Product

SECTION III – COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	WEIGHT %	CAS No.
Proprietary Compound	Proprietary	Trade Secret
Proprietary Compound	Proprietary	Trade Secret
Water	< 75%	7732-18-5

This product is a clear light liquid with very little odor.

Potential Health Hazards:

Eyes: Mists may cause eye irritation or burns.
Skin: Contact may cause skin irritation.
Inhalation: Mists from the product may cause irritation to the throat and lungs.
Ingestion: Drinking this liquid may cause irritation or burns to the mouth, throat and stomach.
Delayed Effects: None Known

SECTION IV – FIRST AID MEASURES

Routes Of Entry: Eyes, skin absorption, inhalation, ingestion.
Signs/Symptoms of Acute Overexposure: Irritated eyes, skin.

First Aid Measures:

Eye Contact: Holding the eyelids apart, flush promptly with copious flowing water for at least 15 minutes. Get medical attention if symptoms persist.
Skin Contact: Remove contaminated clothing and shoes. Wash skin thoroughly with mild soap and plenty of water for 15 minutes. Wash clothing before re-use. Get medical attention immediately.
Inhalation: Remove person to fresh air. If breathing is difficult have qualified person administer oxygen. If breathing has stopped, administer artificial respiration. Get medical attention immediately.
Ingestion: DO NOT INDUCE VOMITING! If swallowed, wash mouth thoroughly with plenty of water. Give the victim large quantities of water or milk to drink. Get medical attention as needed.
* NOTE * NEVER GIVE AN UNCONSCIOUS PERSON ANYTHING TO DRINK.

Chemical Listed As A Carcinogen Or Potential Carcinogen:
National Toxicology Program: No
IARC Monographs: No
OSHA: No

SECTION V – FIRE FIGHTING MEASURES

Flash Point: None
Flammable Limits LEL: NA UEL: NA
Auto-Ignition Temperature: NA
Extinguisher Media: Use extinguisher media appropriate to surrounding fire conditions. Cool fire exposed containers and structures with water.
Special Fire Fighting Procedures: Fire-fighters should wear positive-pressure self-contained breathing apparatus with full protective clothing.
Unusual Fire & Explosion Hazards: None known
Hazardous Combustion Products: NA
Explosion Data: (sensitivity to mechanical impact or static discharge): None Known.

SECTION VI: ACCIDENTAL RELEASE MEASURES

Evacuate spill area and keep unprotected personal away. Wear appropriate clothing as described in section 8. Contain and recover liquid where possible, collect using an inert absorbent material and place appropriate containers for disposal. Prevent spill from entering sewers and water courses. Report releases as required by local, state and federal authorities.

SECTION VII – HANDLING AND STORAGE

Handling: Avoid contact with eyes. Avoid prolonged or repeated skin contact. Avoid breathing mists or aerosols. Where protective clothing as described in section 8. Use

with adequate ventilation. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Do not reuse containers. Empty containers retain product residuals and which can be hazardous. Follow all MSDS precautions when handling empty containers.

Storage: This product should be stored at room temperature. Extended storage under cold conditions may result in a slight clouding of the product appearance. This clouding will not affect performance and may be cleared by warming the product and gentle mixing. Do not allow the product to freeze or separation may occur. In the event that this product freezes, the product may be remixed. Protect storage vessels and containers from physical damage.

SECTION VIII – EXPOSURE CONTROLS/ PERSONAL PROTECTION

Engineering controls: Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.
Respiratory Protection: In operations where exposure levels are exceeded, a NIOSH approved respirator with a dust/mist carriage or supplied air respirator appropriate for the form and concentration of the contaminants should be used. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.
Skin Protection: Wear impervious gloves such as rubber or neoprene. Full work clothing, including long sleeved shirts, pants and work boots should be worn.
Eye Protection: Chemical safety goggles when handling, where splashing is possible. Wearing contact lens is not recommended.
Other: Impervious coveralls, apron and boots as needed to prevent contact. A safety shower and eye wash should be available in the immediate work area.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE & ODOR:	Clear colorless liquid with little or no odor.
Boiling Point:	103º C 218º F
Freezing Point:	NA
Specific Gravity:	1.19 ± 0.04 (H_20 = 1)
% Volatile By Volume:	NA
Voc Content:	0%
Weight Per Gallon:	9.92 ± 0.34 #/Gal
pH:	4.0 ± 1.0
Vapor Pressure:	NA
Vapor Density:	NA
Solubility In Water:	Soluble
Evaporation Rate	ND

SECTION X – STABILITY AND REACTIVITY

Stability: Stable under normal storage and handling conditions.
Incompatibility: None Known
Hazardous Decomposition: None Known
Hazardous Polymerization: Will not occur

SECTION XI – TOXICOLOGICAL INFORMATION

Immediate (Acute) Effects: None Known
Delayed (Subchronic And Chronic) Effects: Data Not Available
Other Data: None
Carcinogenicity: None of the components is listed as a carcinogen or suspected carcinogen by IARC, NTF or OSHA.
Mutagenicity: None currently known.
Medical Conditions Aggravated by Exposure: Employees with pre-existing eye, skin, and respiratory disease may be at increased risk from exposure.

SECTION XII – ECOLOGICAL INFORMATION

This product is certified to NSF Standard 60 for a maximum use of 12 mg/L.

SECTION XIII – DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state and federal environmental regulations.
RCRA
Is the unused product a RCRA hazardous waste if discarded? No

SECTION XIV - TRANSPORTATION INFORMATION

DOT Hazardous Materials Description:
Proper Shipping Name: Not Regulated
UN Number: None
Hazardous Class/Packaging Group: None
Hazard Labels Required: None

SECTION XV – REGULATORY INFORMATION

Clean Air – This product does not contain any substances subject to Clean Air Act reporting
Clean water– This product is not subject to Clean Water Act reporting.
TSCA- All of the ingredients in this product, are listed on the EPA TSCA Inventory.
Sara Title III 313: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III Section 313 (40 CFR 372):
None
Sara Title III 302/304: This product is not an extremely hazardous substance subject to reporting under 40 CFR 355.
Sara Title III, 311 & 312: Acute Health Hazard
CERCLA:
"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients. None
RCRA:
Is the unused product a RCRA hazardous waste if discarded? No
VOC: Contains 0% VOC. **HAPS:** None
Carcinogenicity information: No hazards known
Canada:
This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.
Canadian CEPA: All the components of this product are listed on the Canadian DSL.
Canadian WHMIS Classification: None

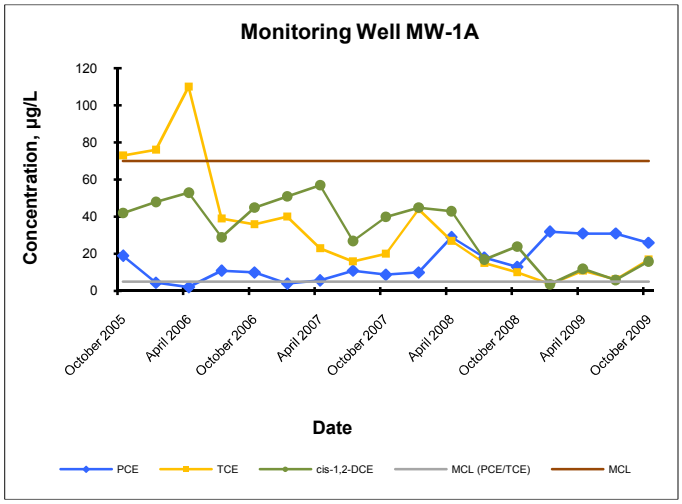
SECTION XVI – OTHER INFORMATION

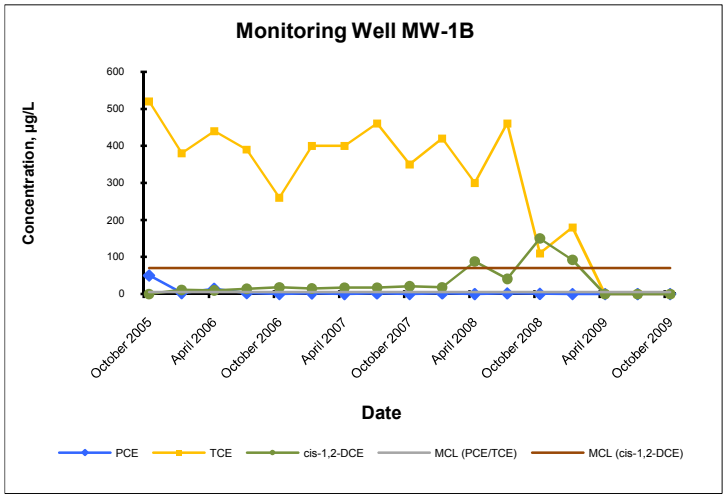
NFPA Rating: Health = 1 Fire = 0 Reactivity = 0
HMIS Rating: Health = 1 Fire = 0 Reactivity = 0

This above information is believed to be correct but does not propose to be all inclusive and shall be used only as a guide. AQUA-PURE shall not be held liable for any damage resulting from handling or from contact with the above product. This information relates only to the product designated herein and does not relate to its use in combination with any other material or process.

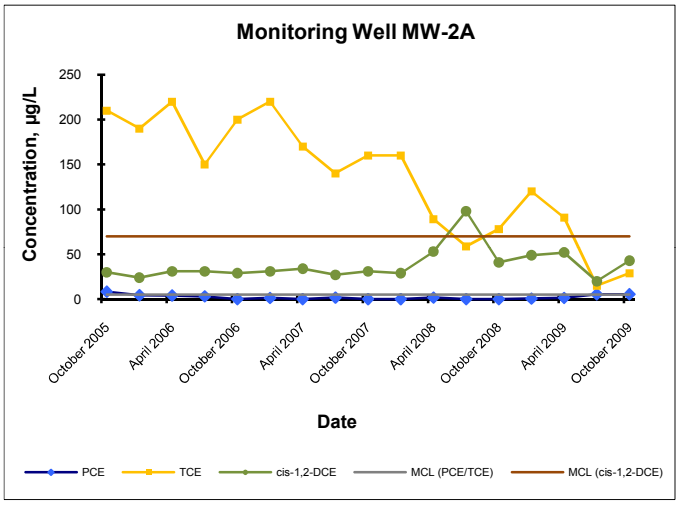
Appendix D

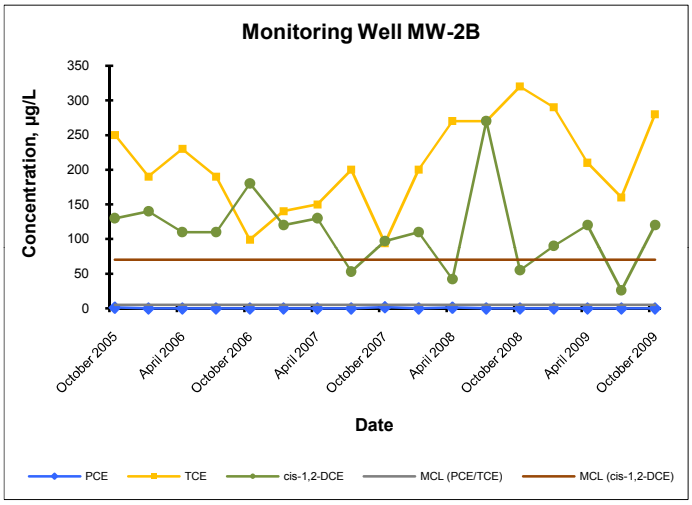
Trend Graphs

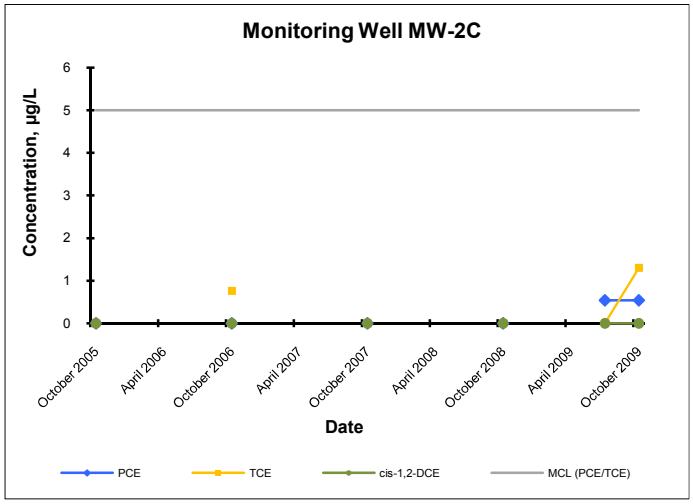


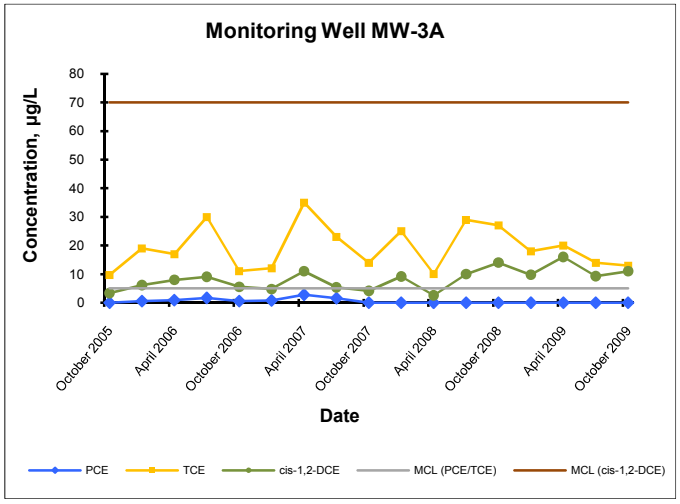


Note: cis-1,2-DCE data rejected in July 2009.

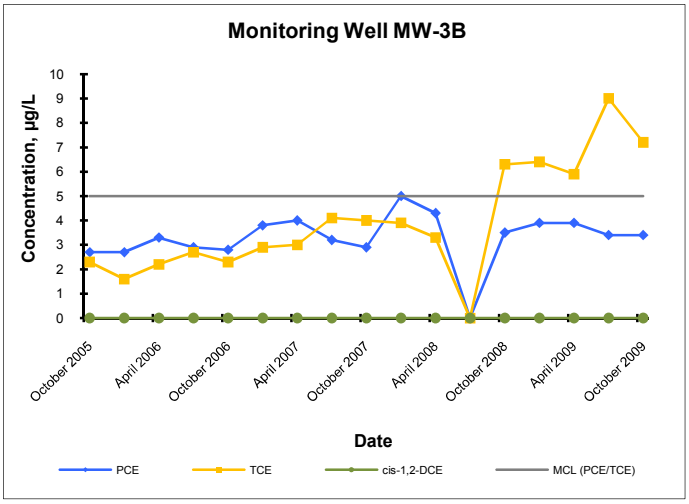


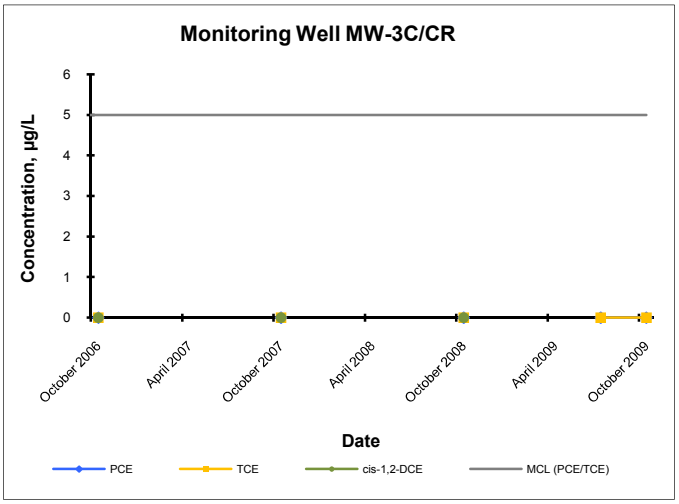


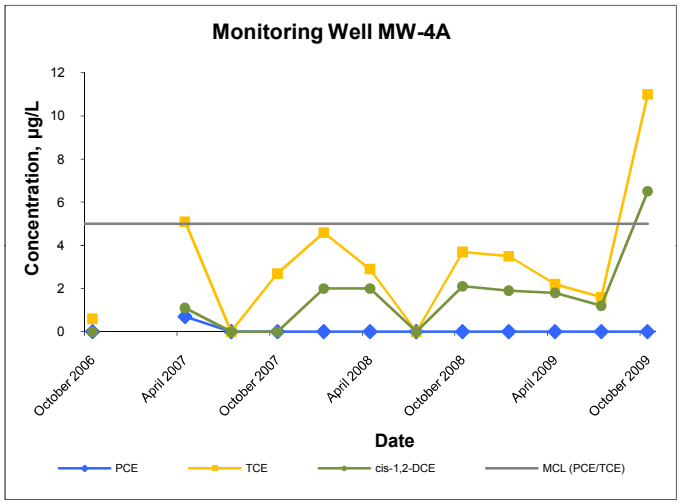


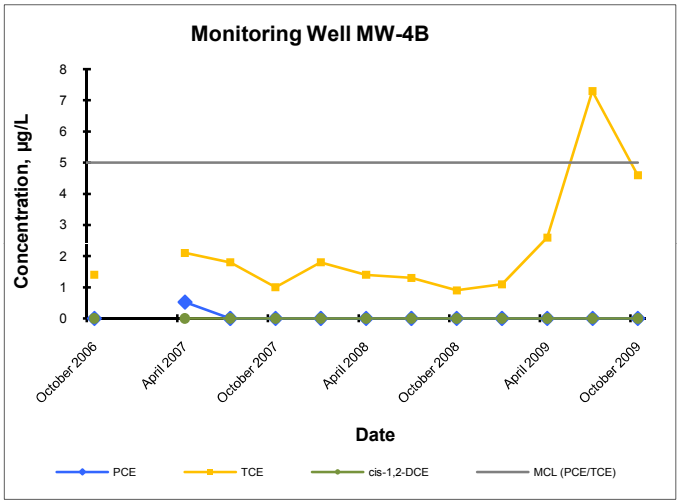


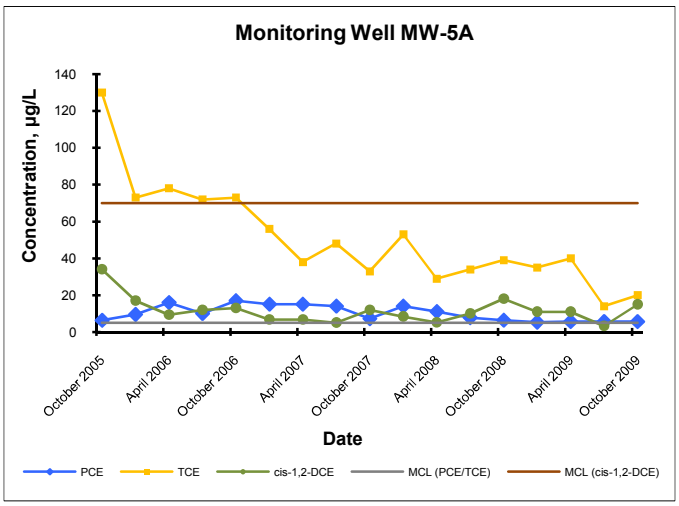
NOTE: Breaks in lines denote that no sample was collected during that date.

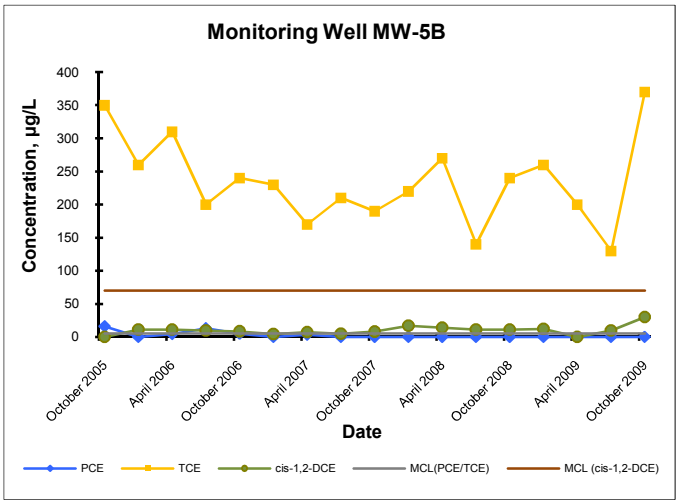












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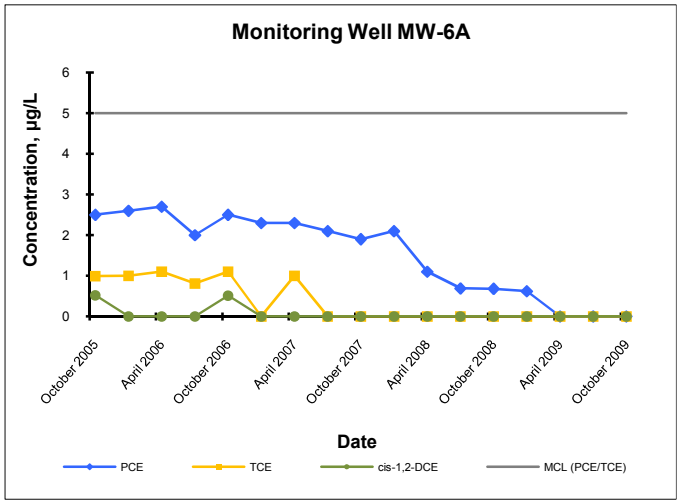
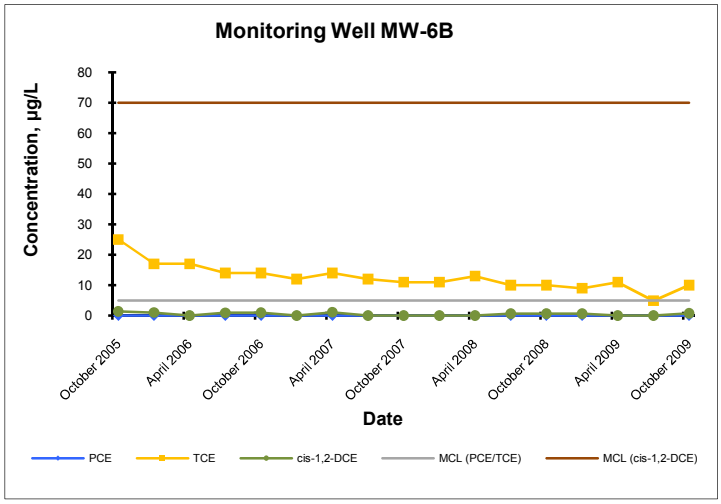
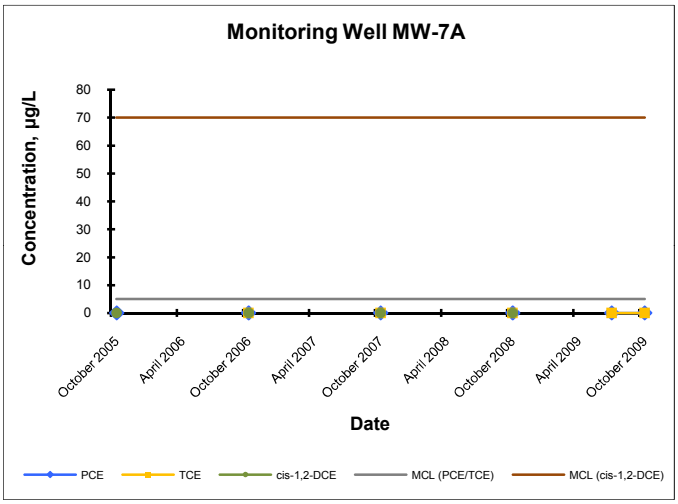
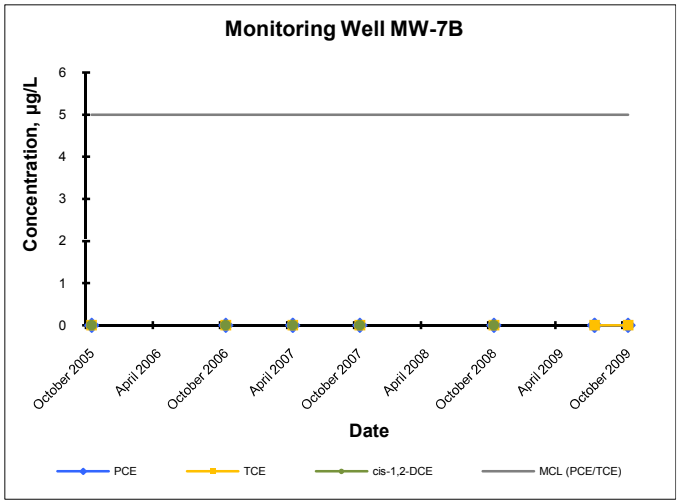
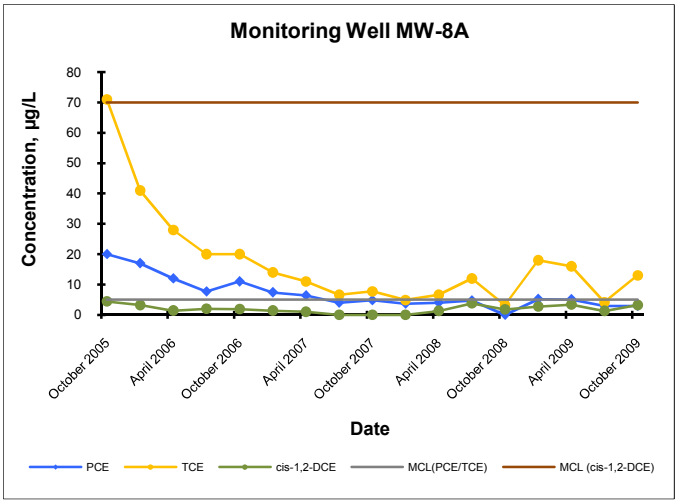
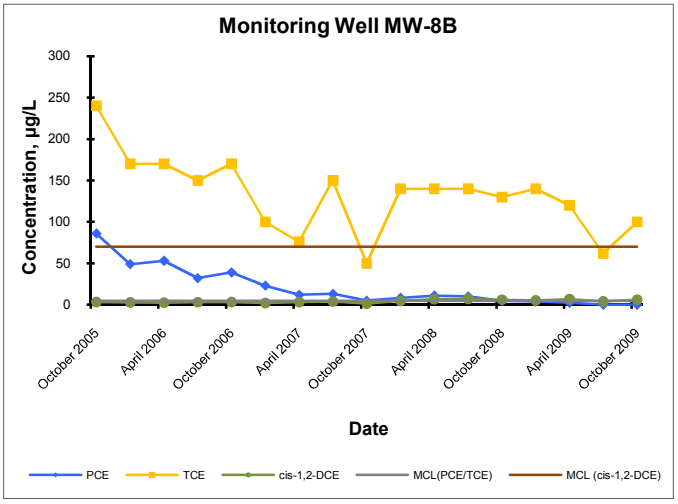




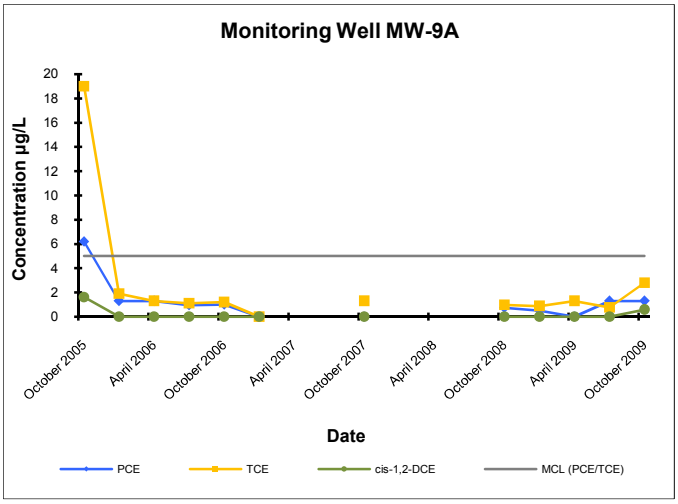


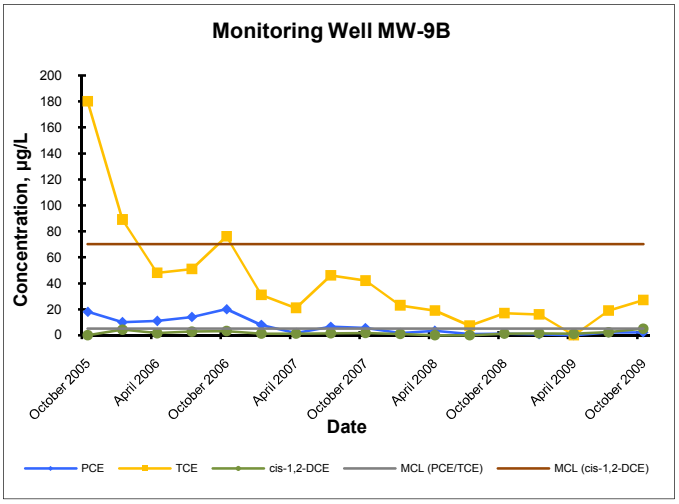


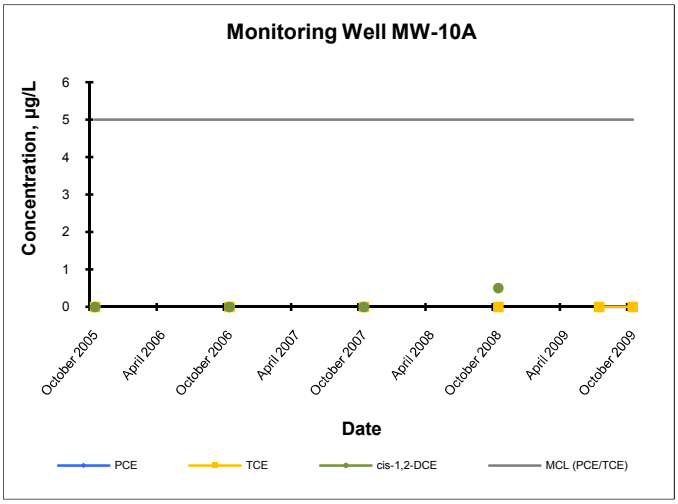


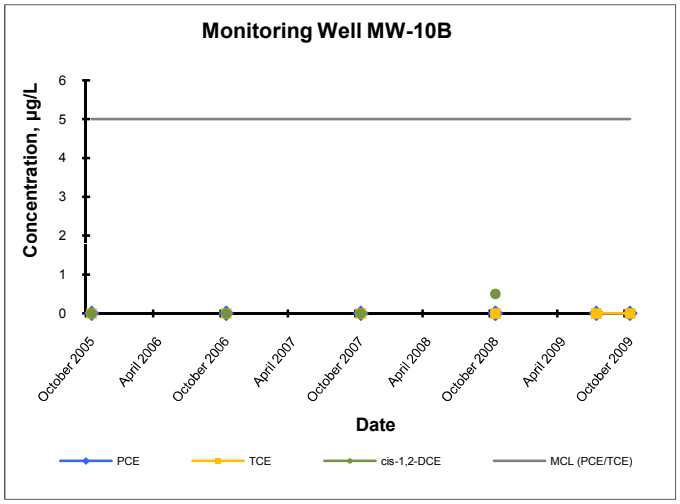


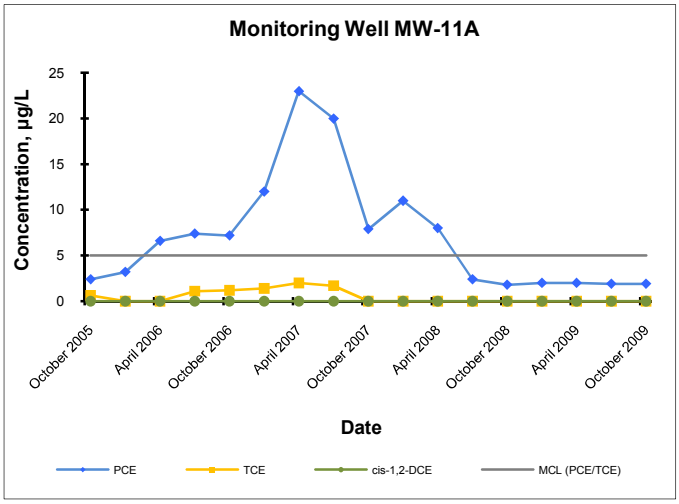
NOTE: Breaks in lines denote that no sample was collected during that date.

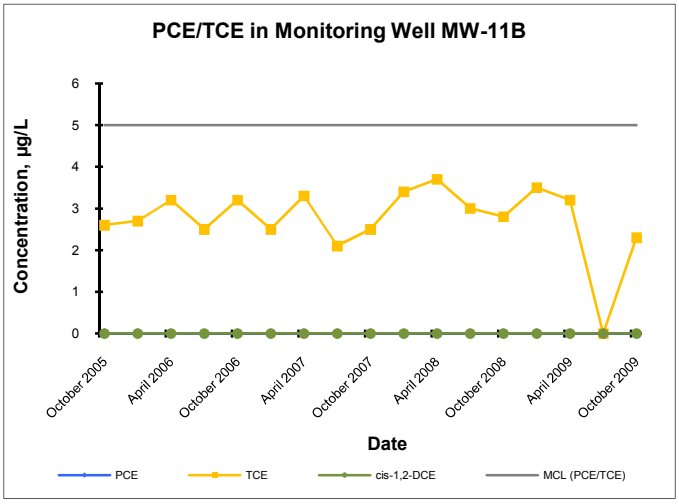




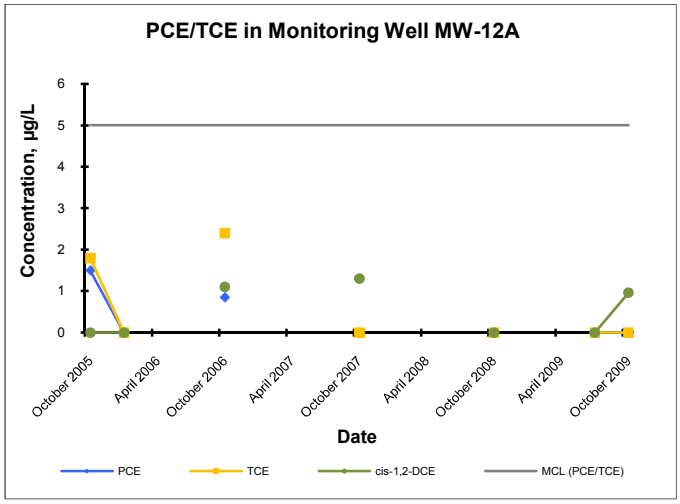


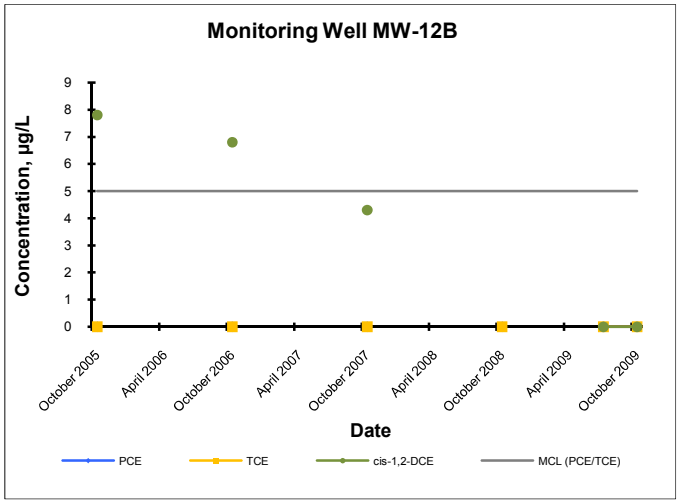


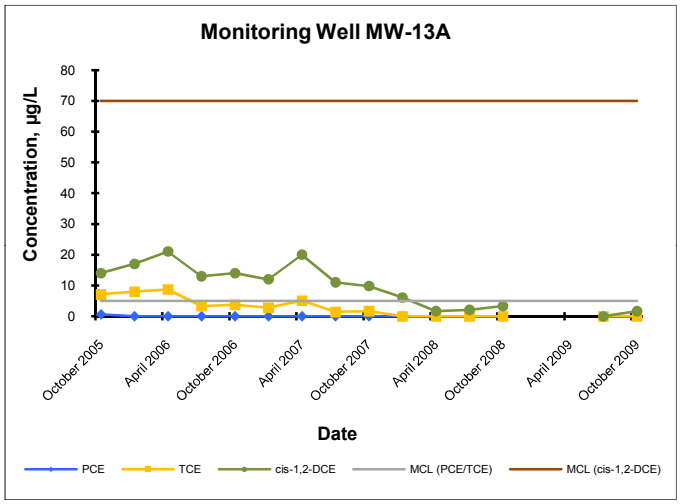


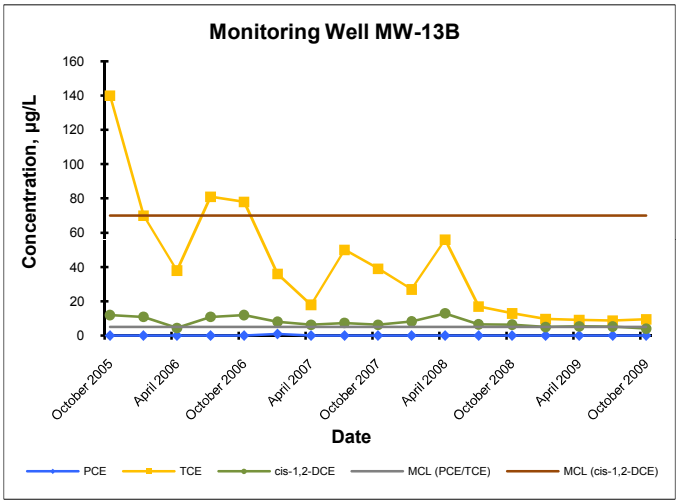


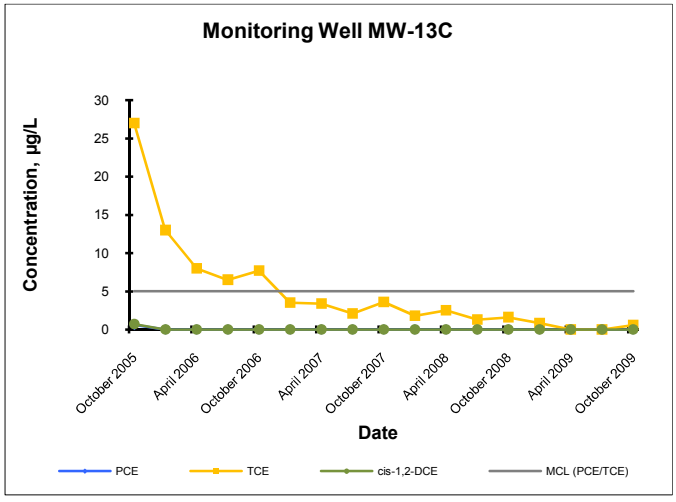
NOTE: Breaks in lines denote that no sample was collected during that date.

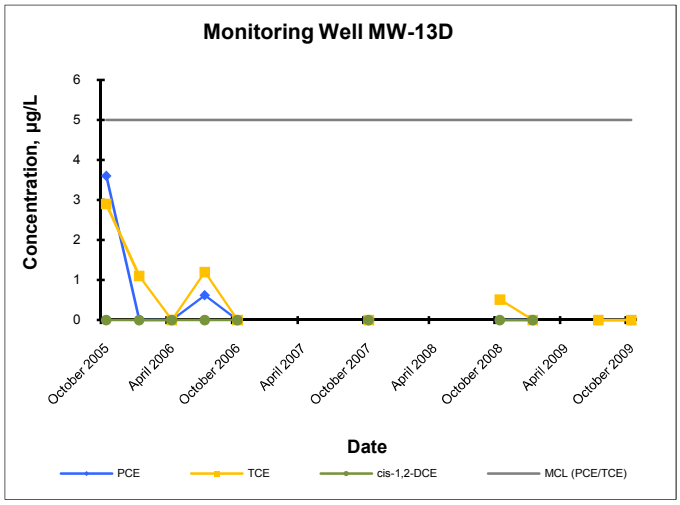






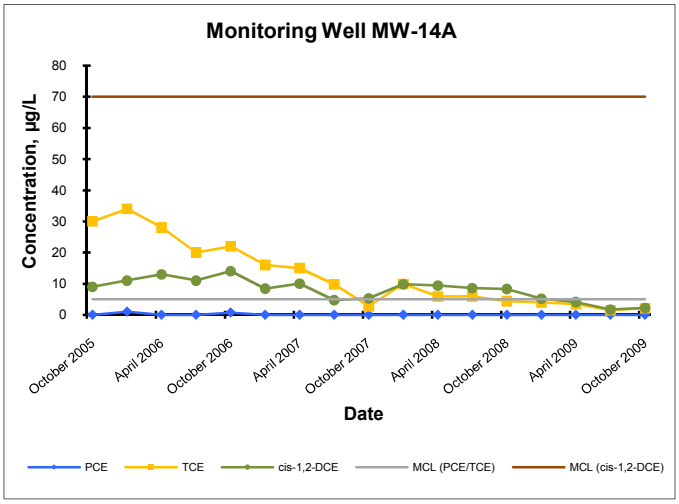


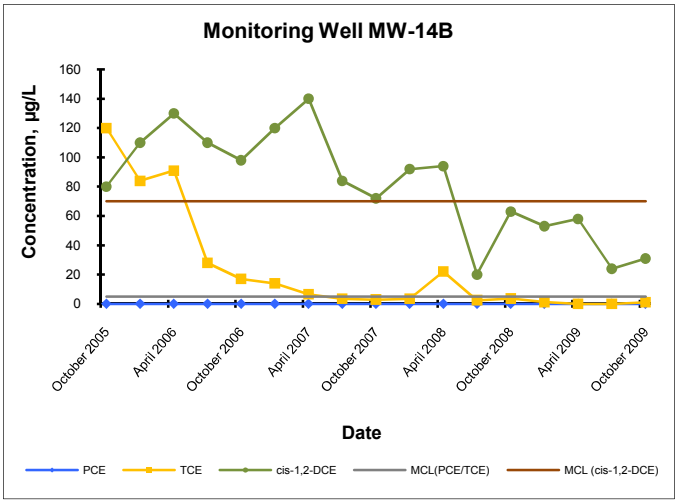


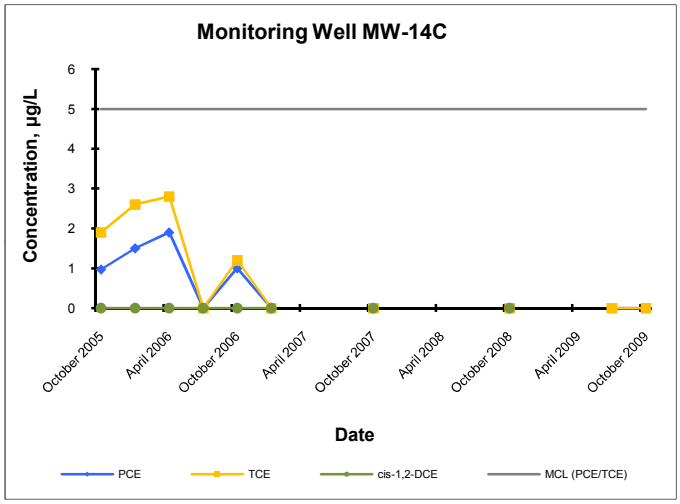


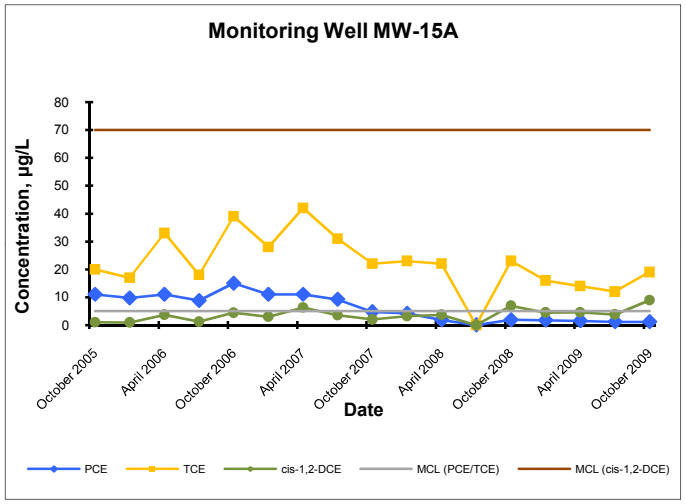
NOTE: Breaks in lines denote that no sample was collected during that date.

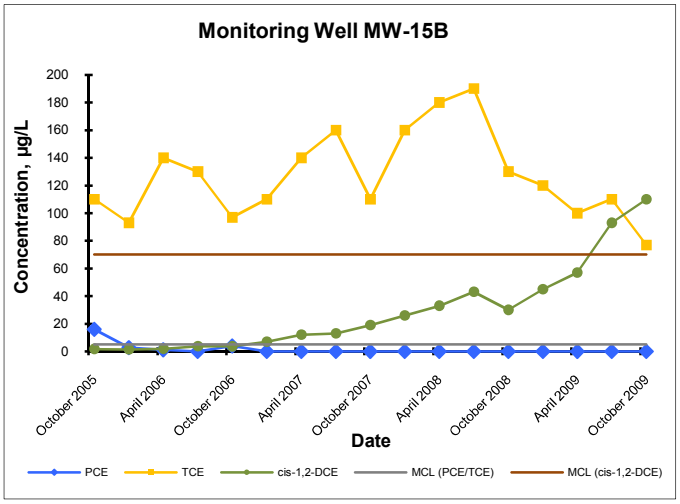
NOTE: Monitoring Wells 16 through 28 Installed September/October 1999.

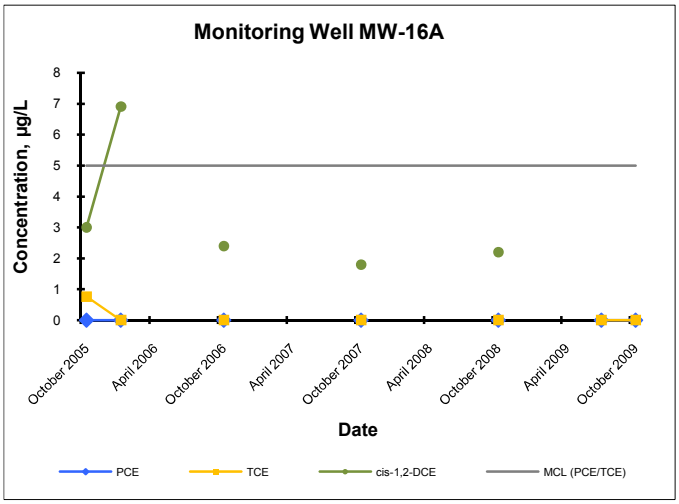




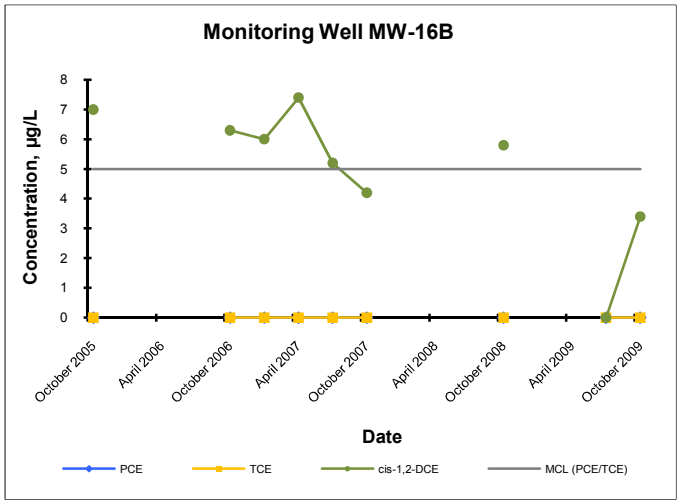


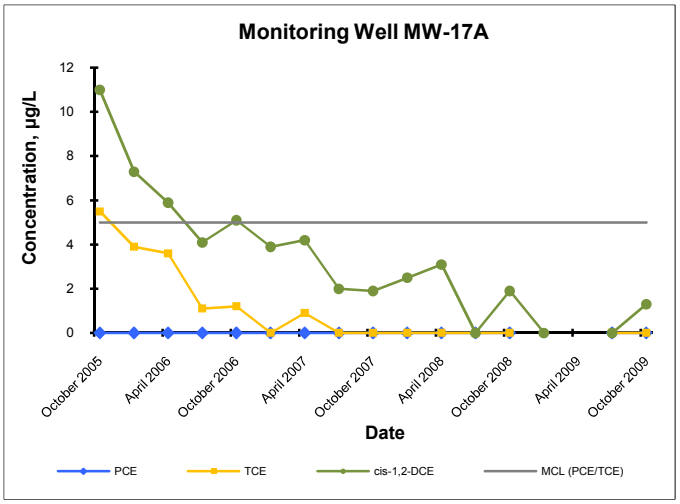


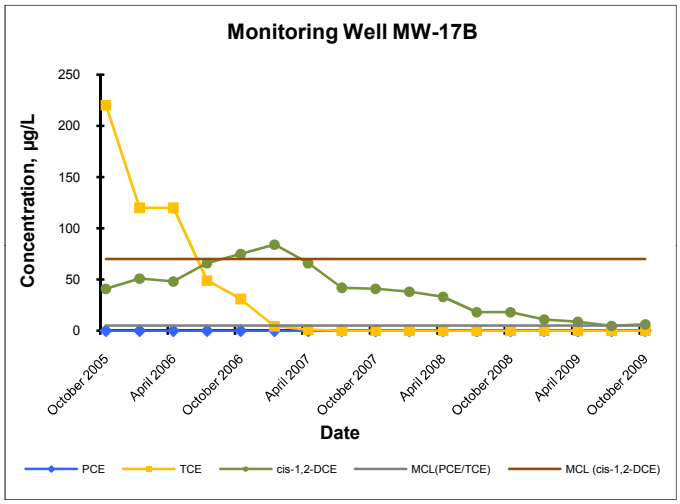


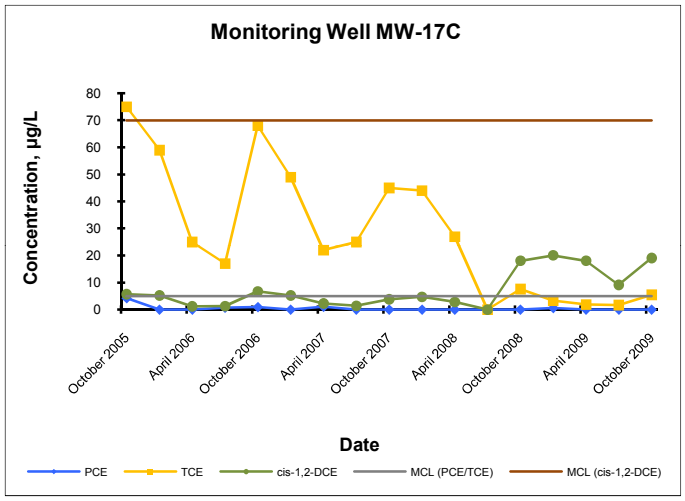


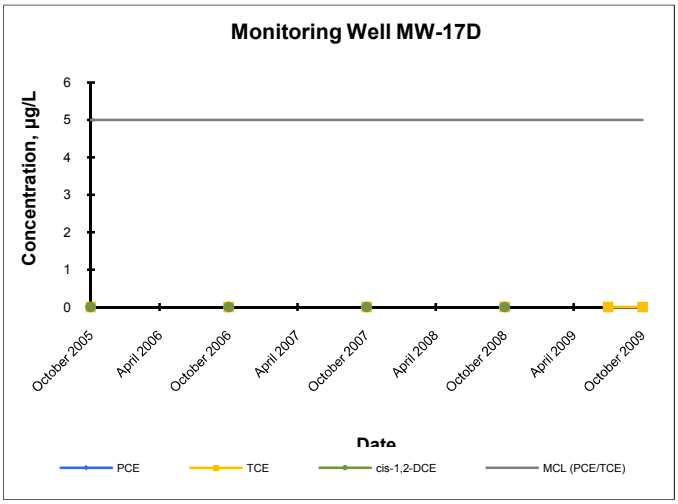
NOTE: Breaks in lines denote that no sample was collected during that date.

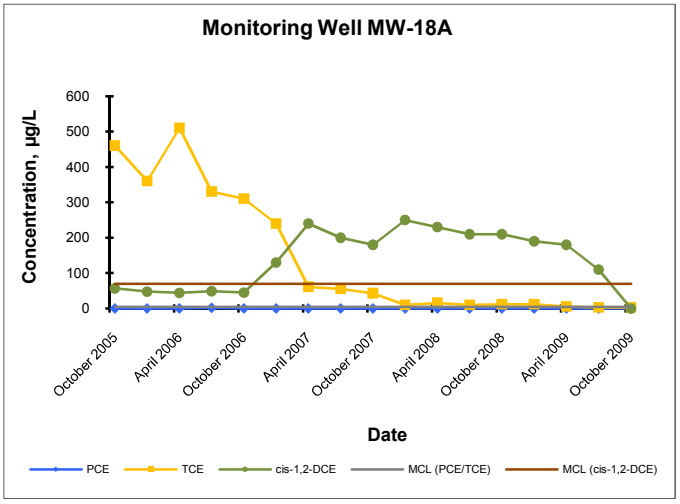




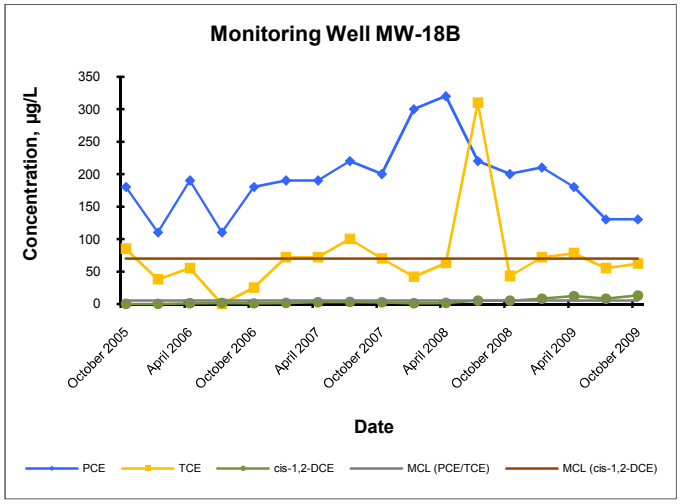


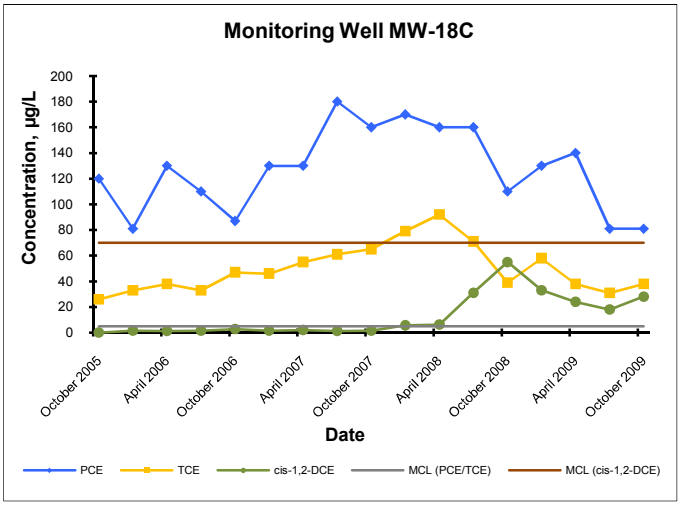


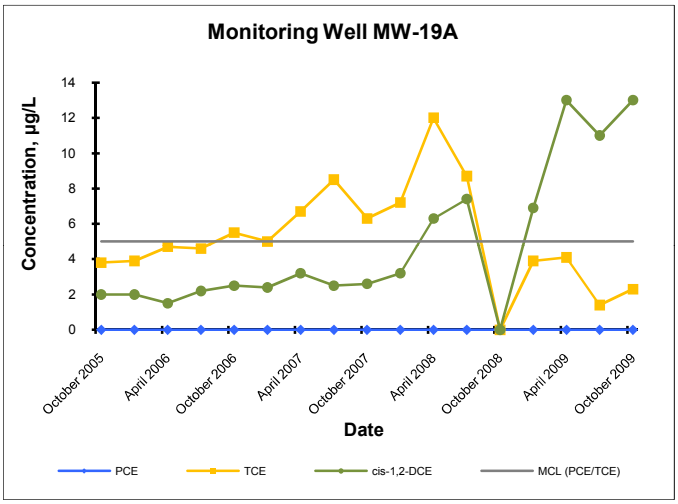


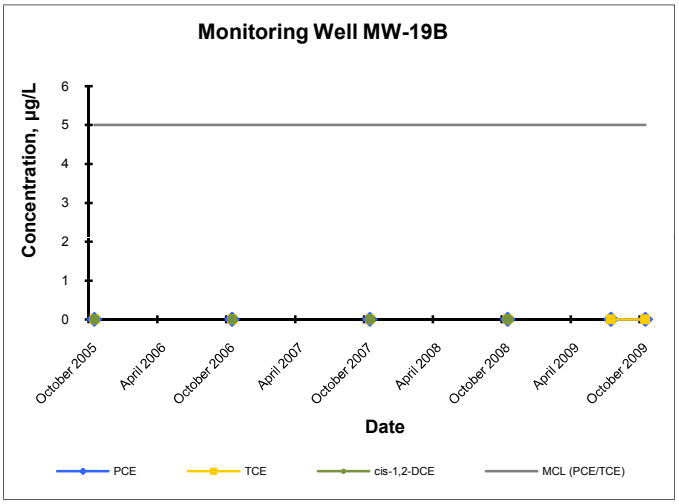


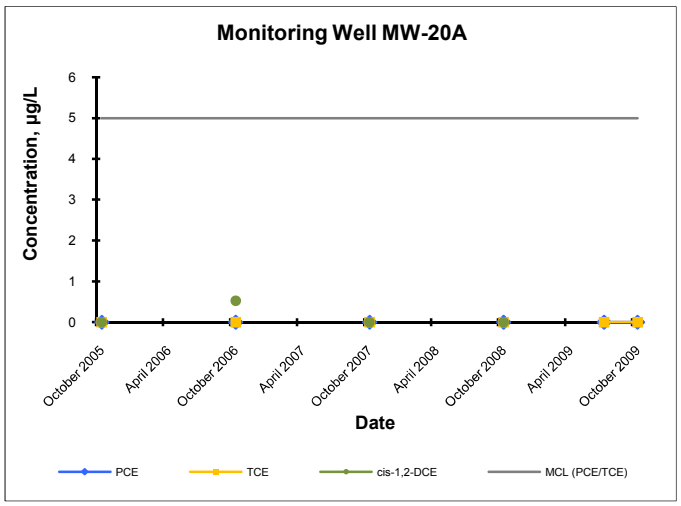
NOTE: Breaks in lines denote that no sample was collected during that date.

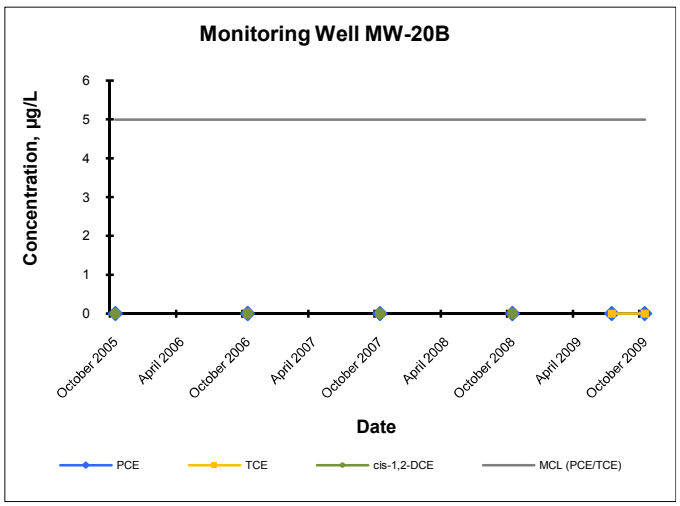












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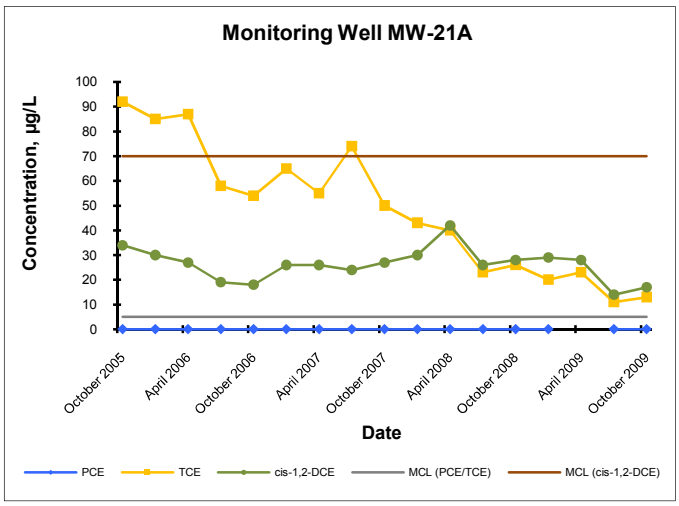
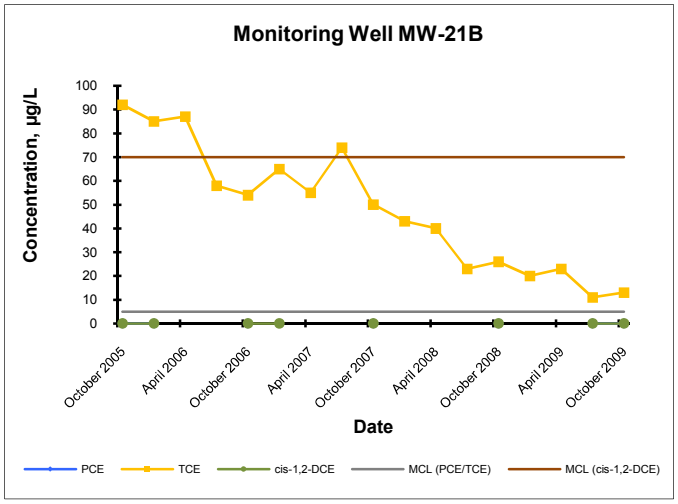
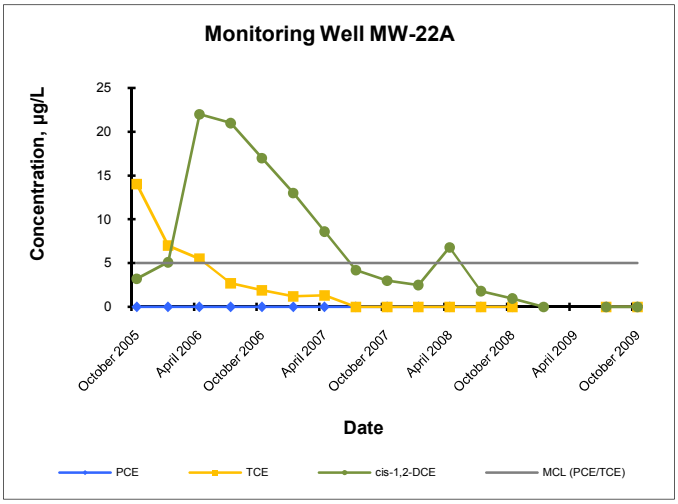
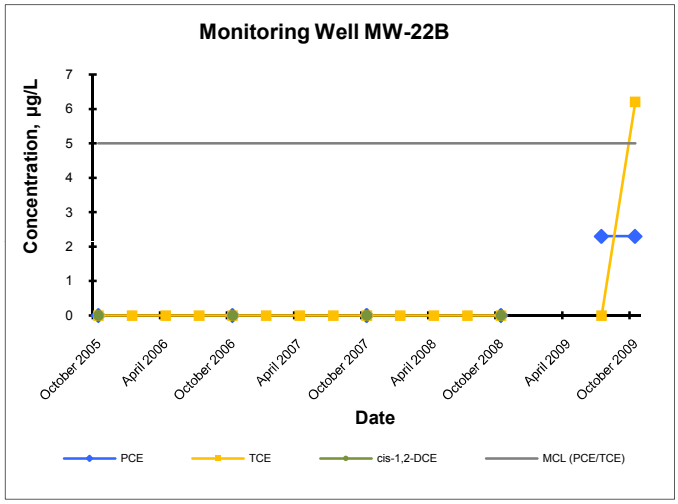
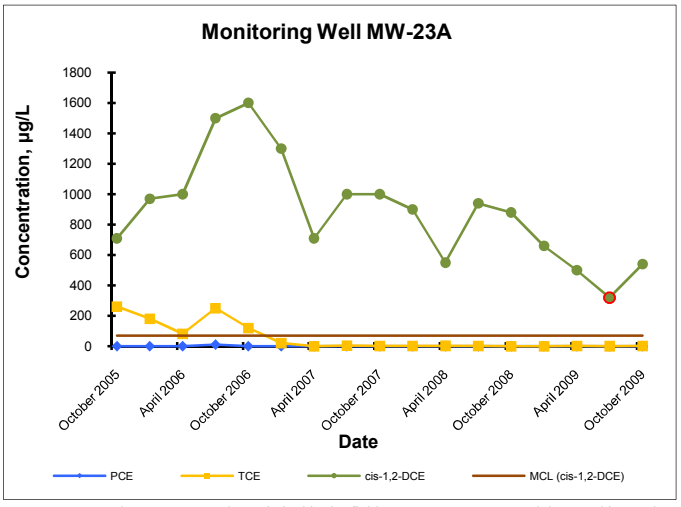


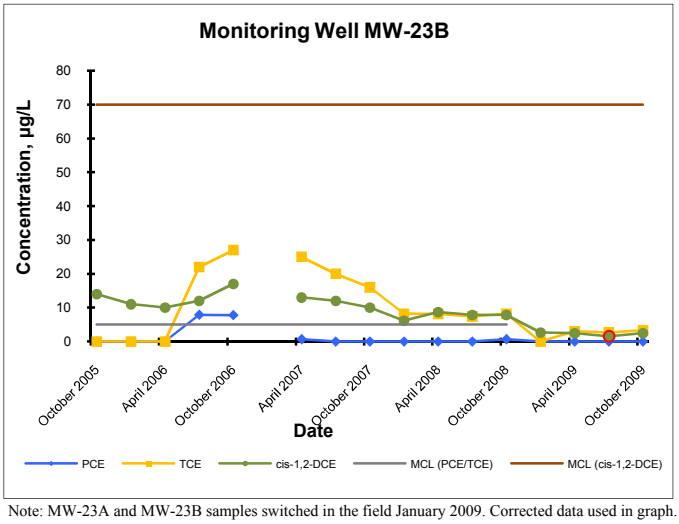






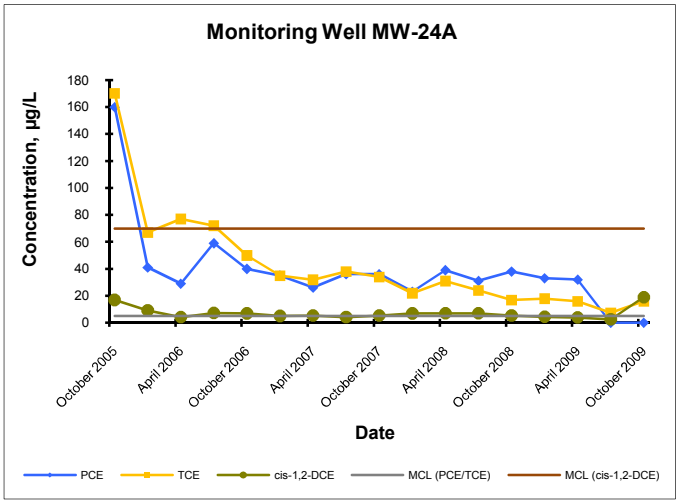


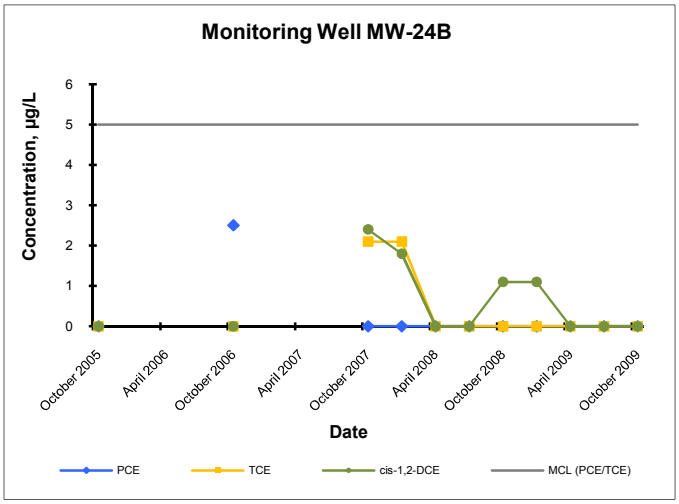
Note: MW-23A and MW-23B samples switched in the field January 2009. Corrected data used in graph.

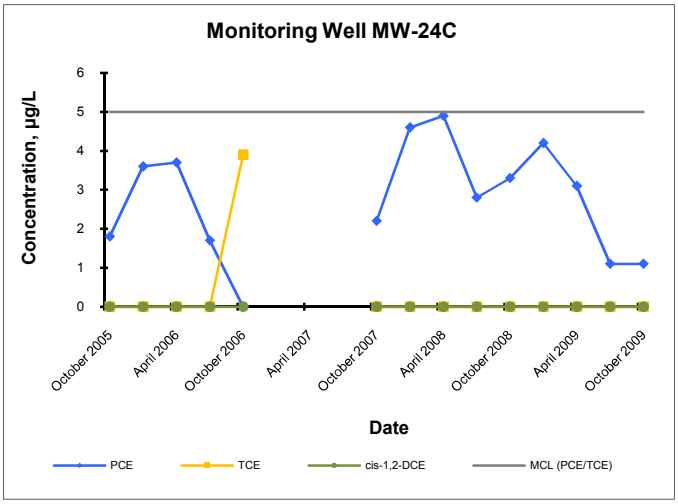


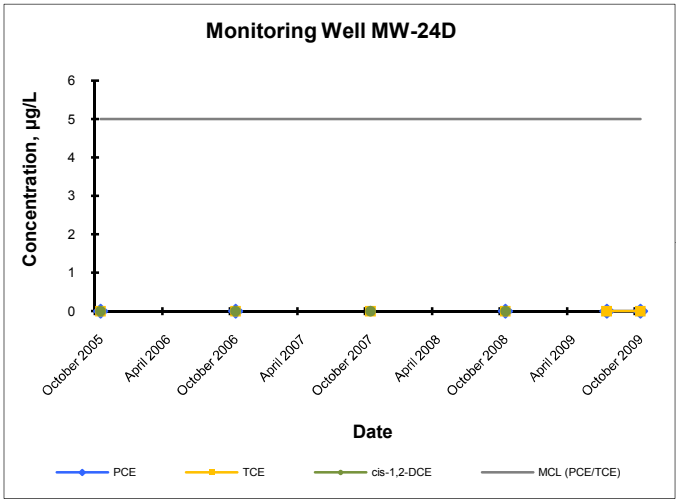
Note: MW-23A and MW-23B samples switched in the field January 2009. Corrected data used in graph.

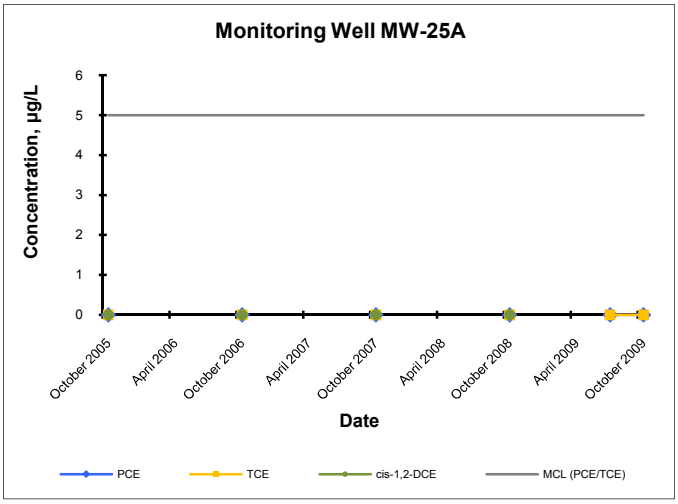
NOTE: Breaks in lines denote that no sample was collected during that date.

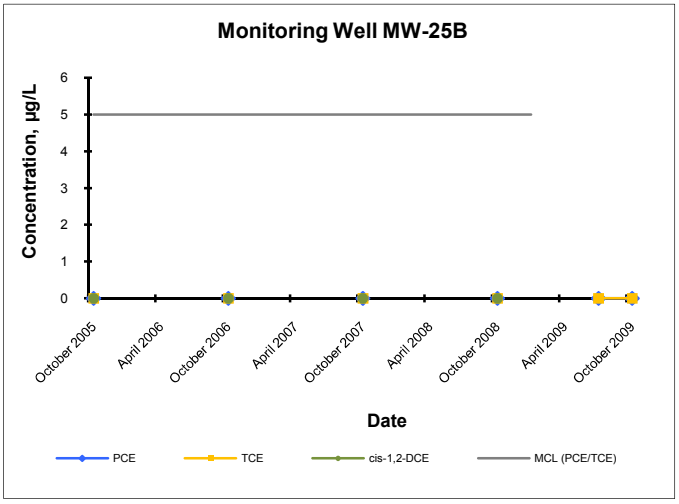












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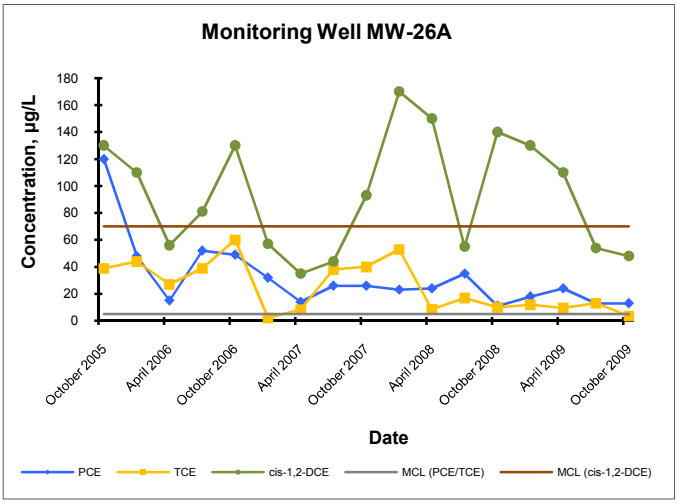

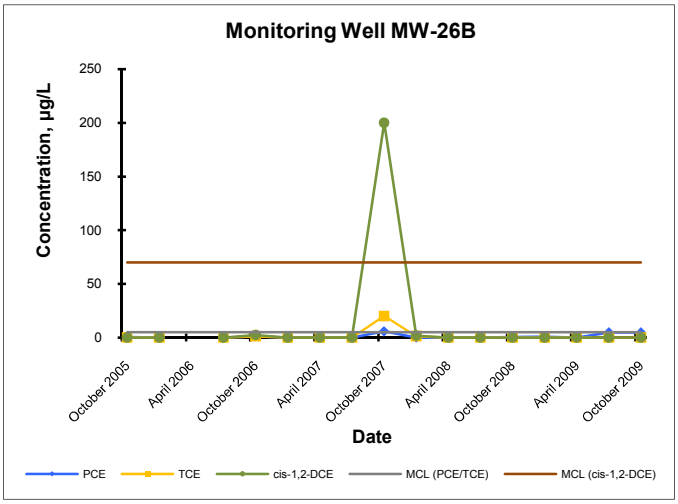

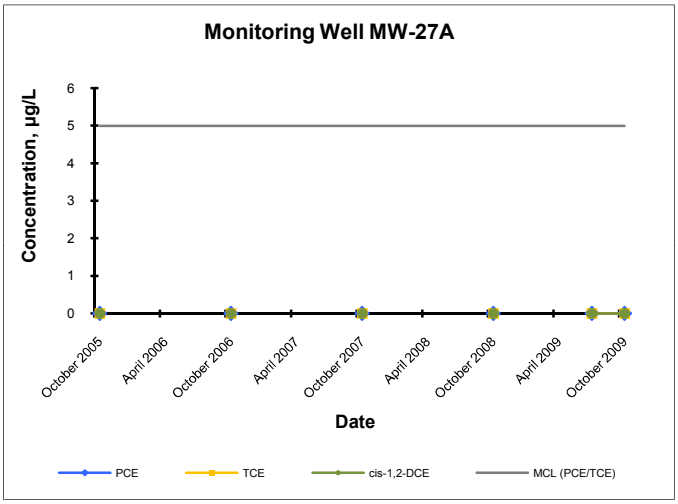

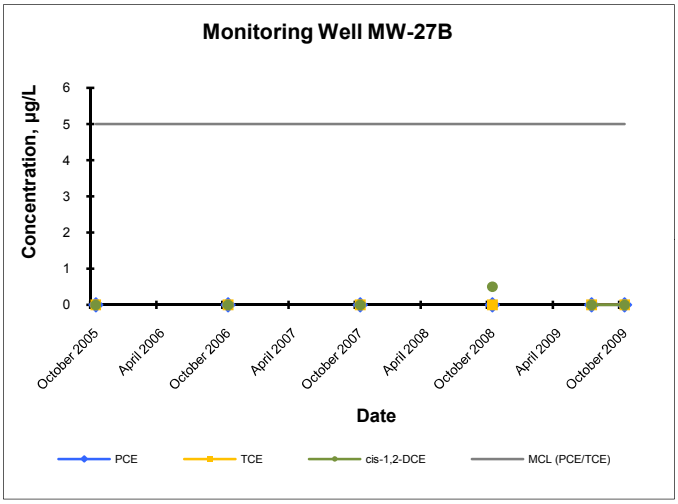

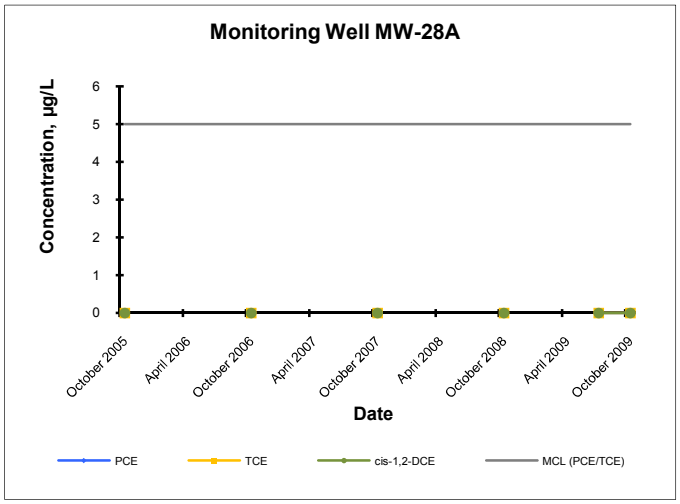

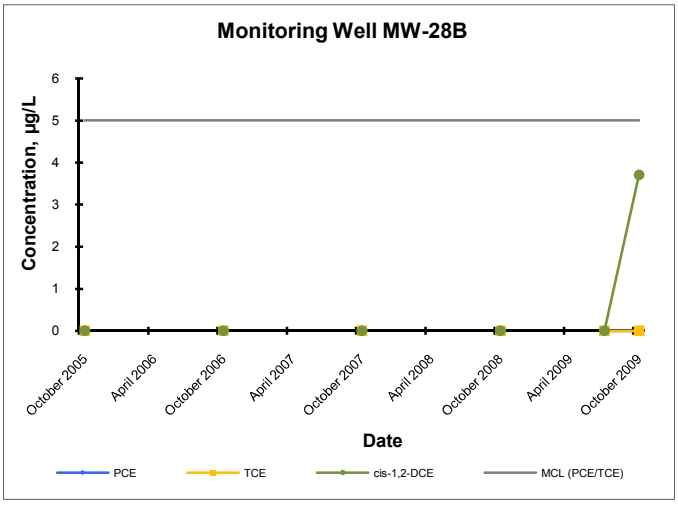

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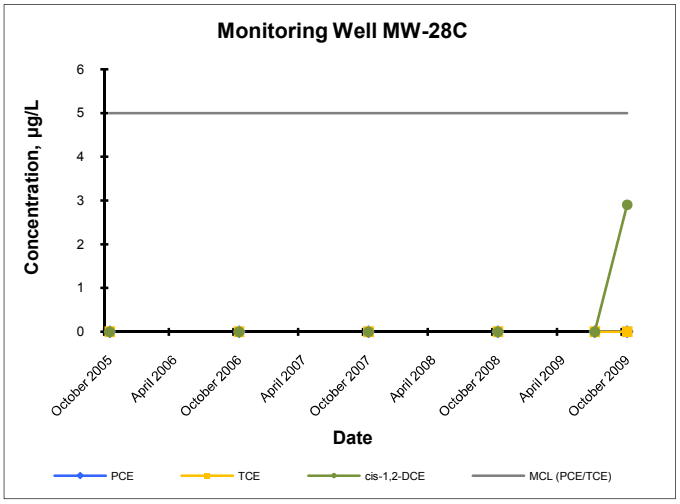
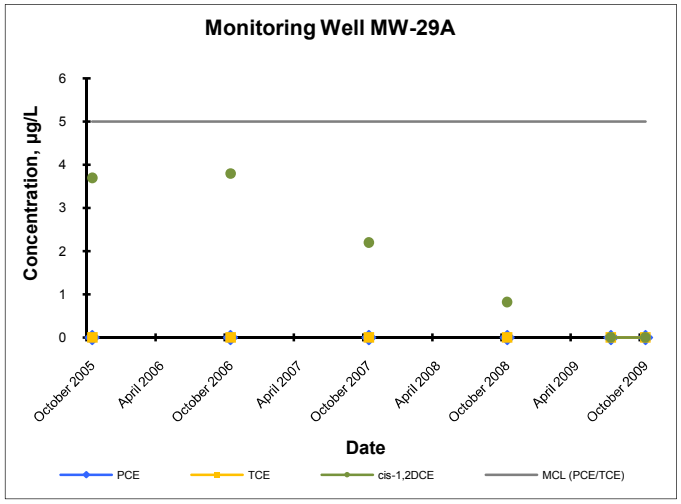
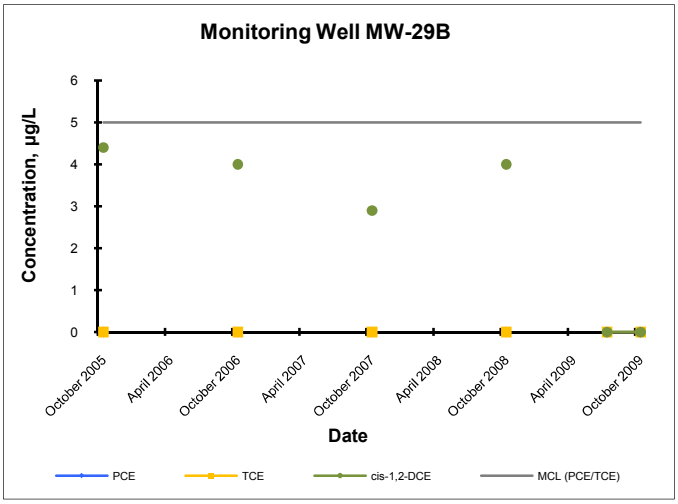
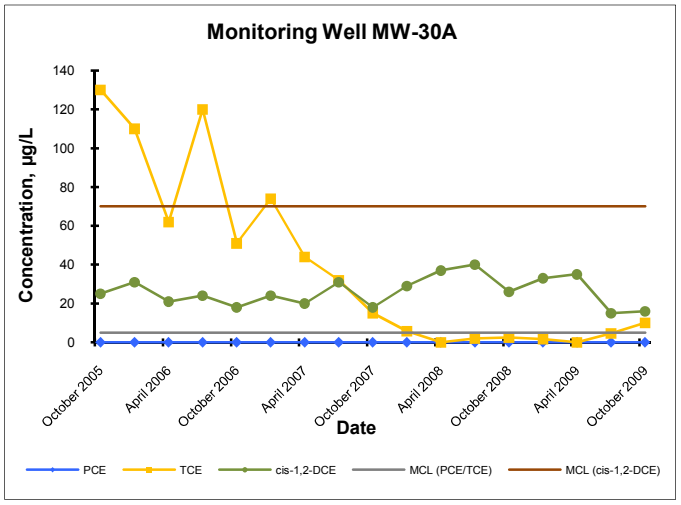
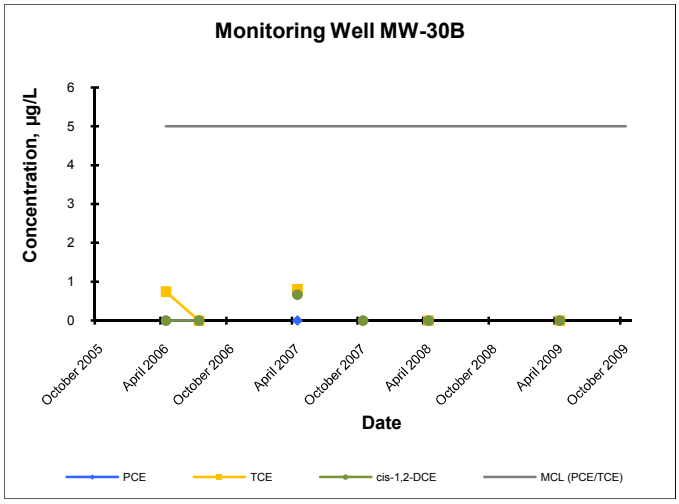
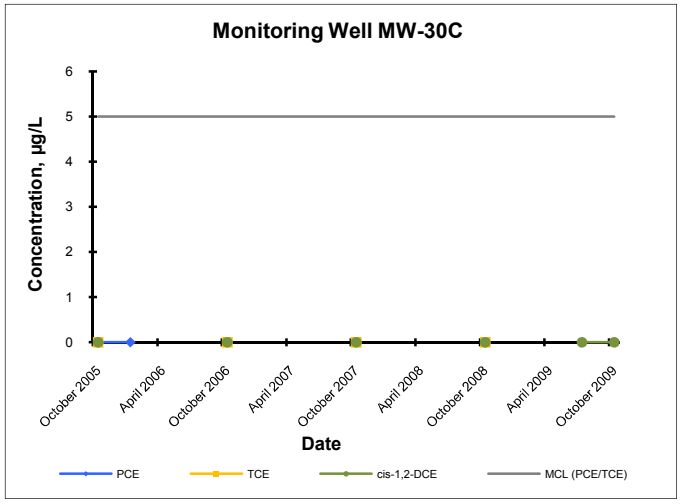




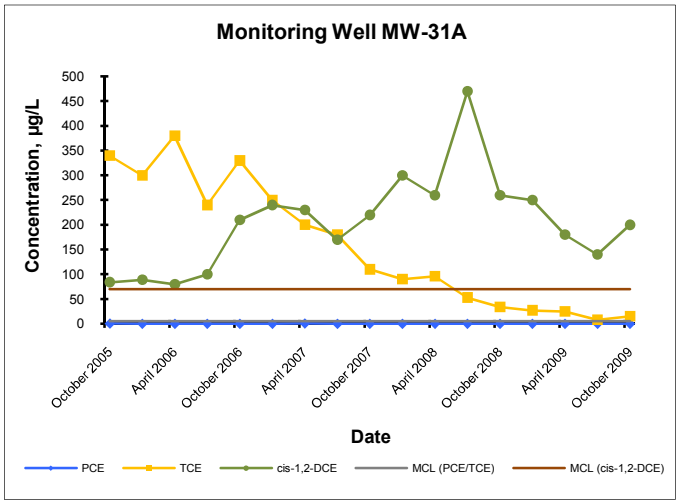


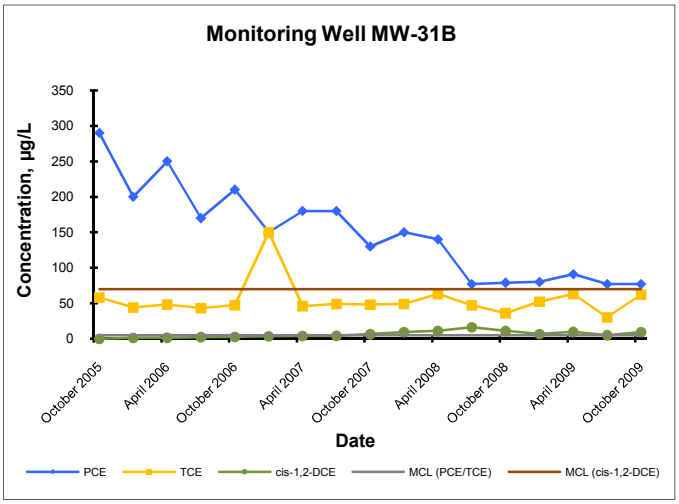


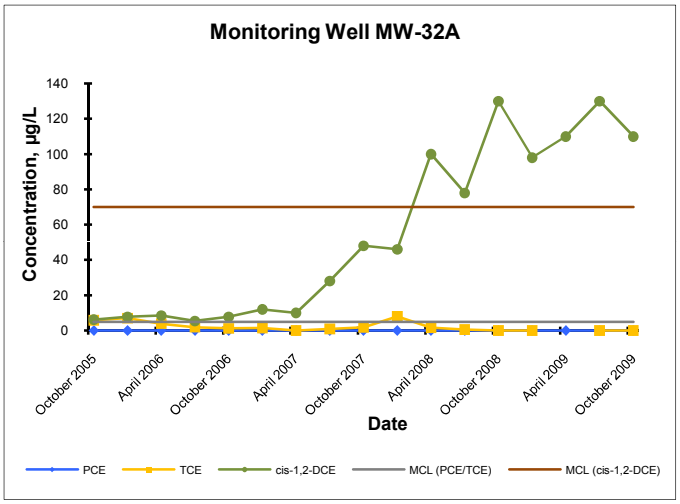


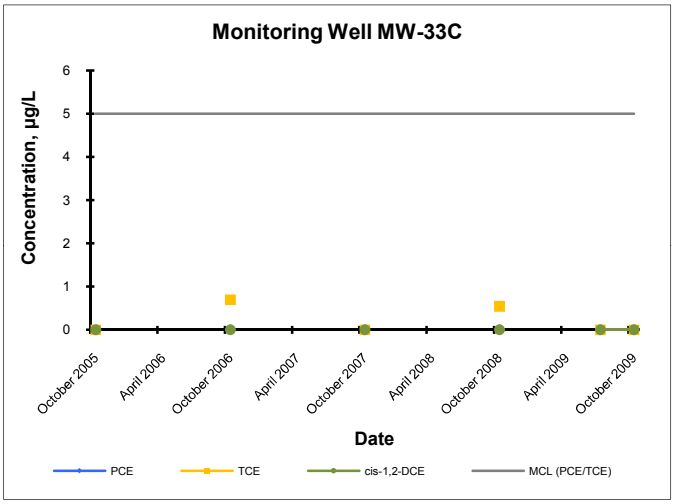


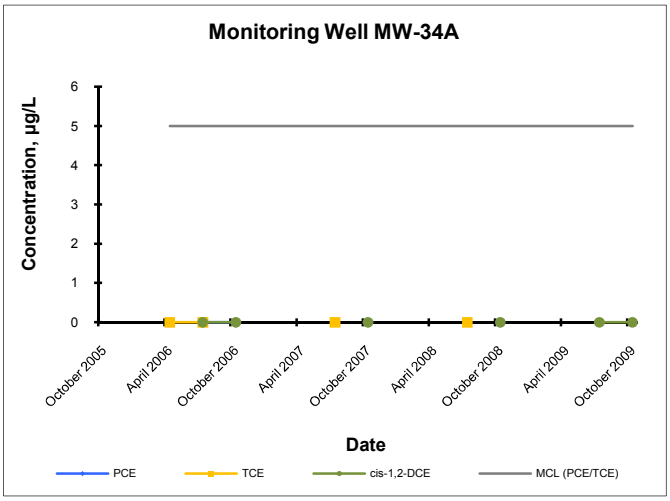
NOTE: Breaks in lines denote that no sample was collected during that date.

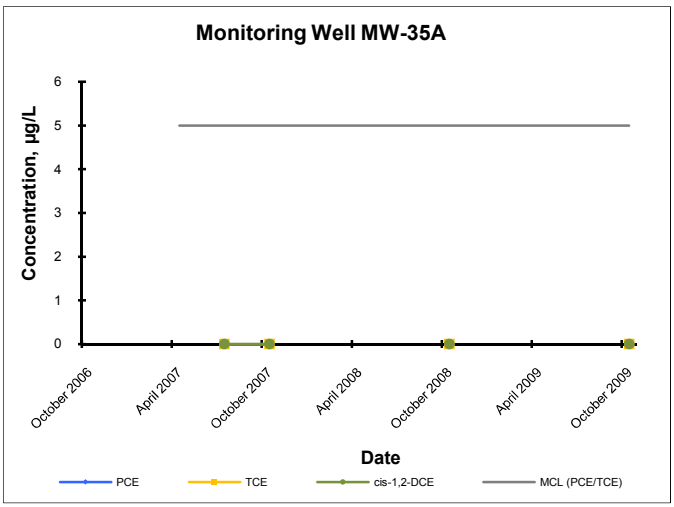












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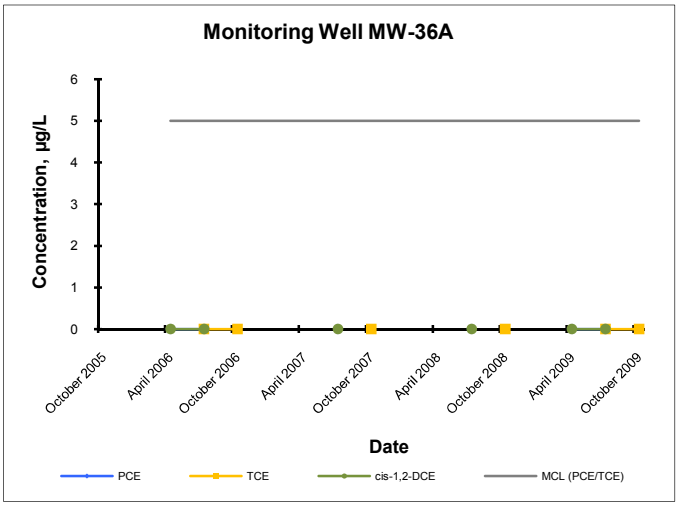
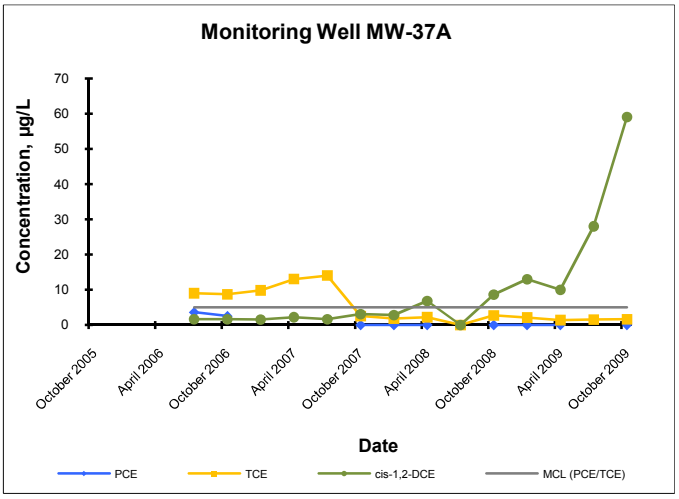
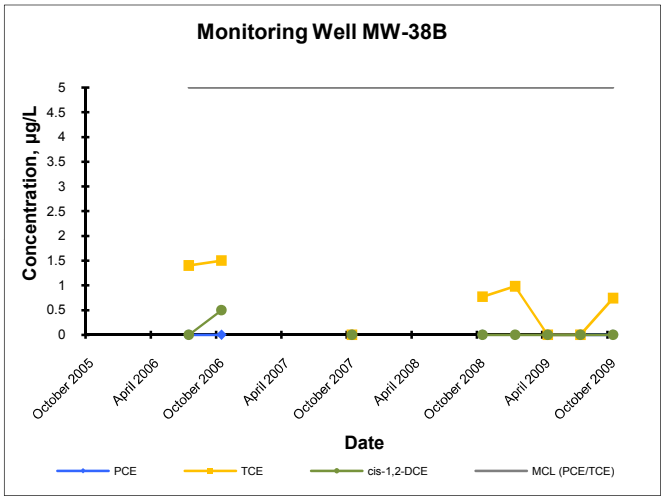
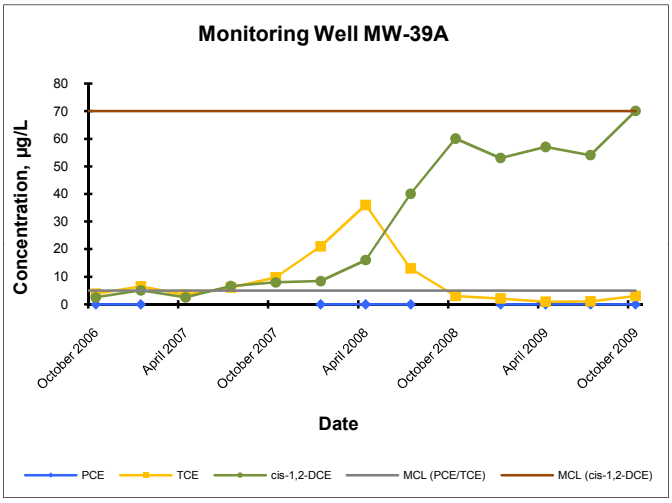
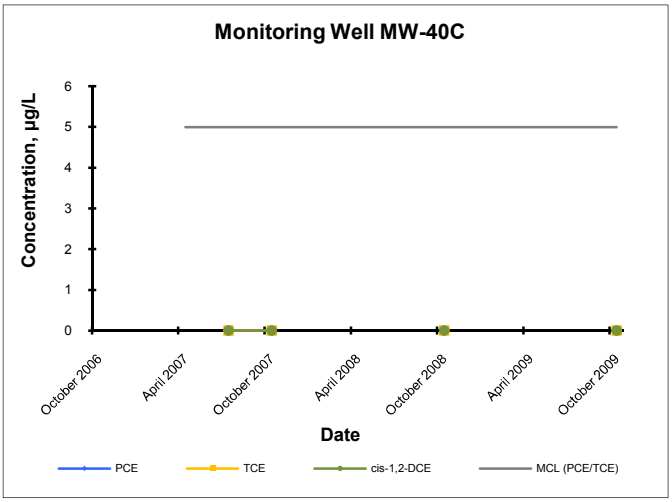


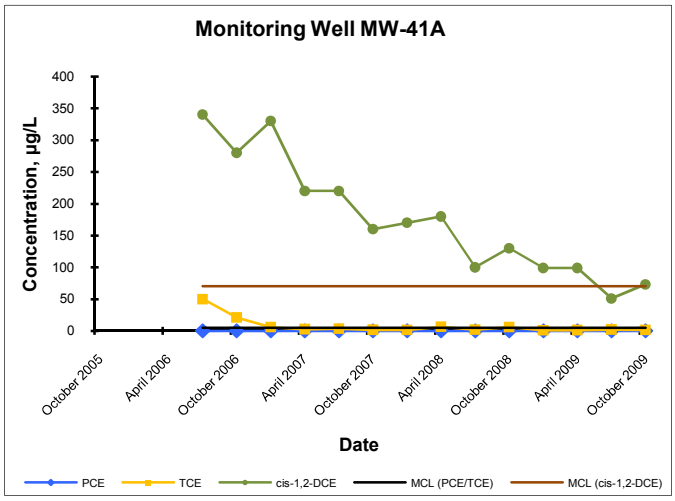


Note: PCE data rejected in July 2009.

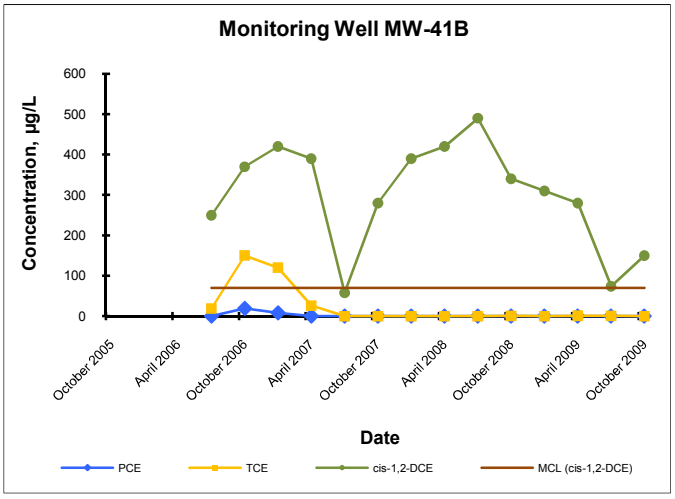


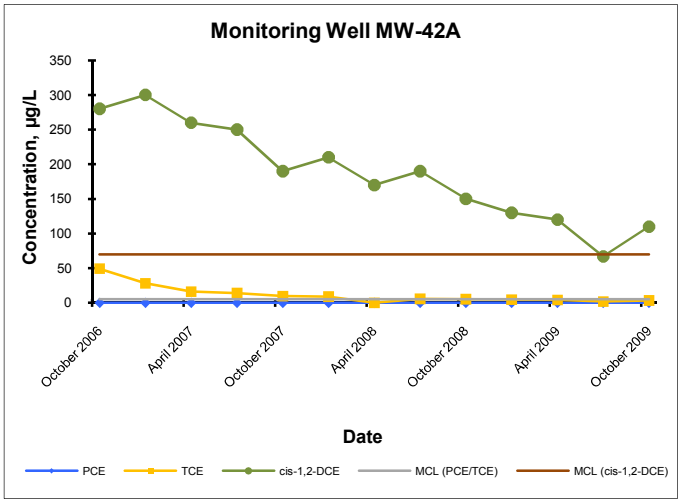


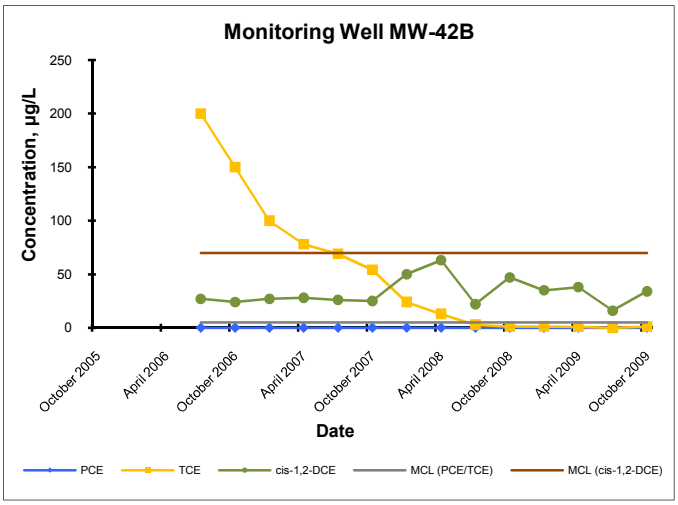


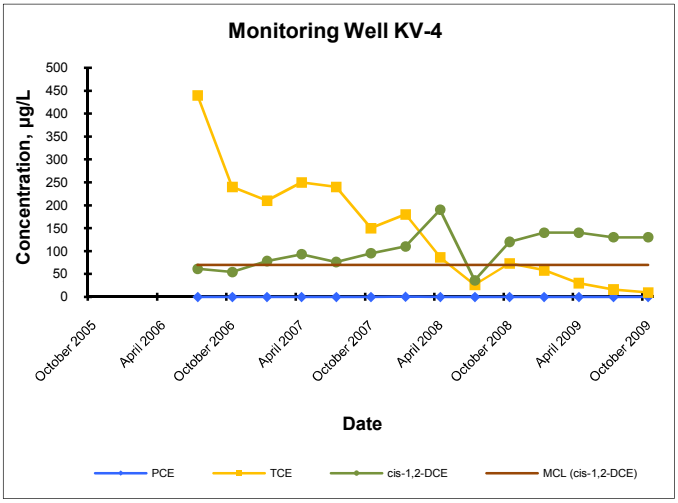


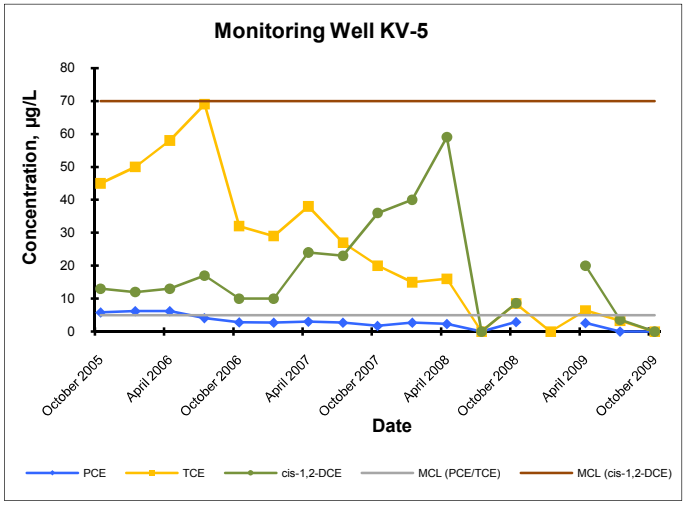
NOTE: Breaks in lines denote that no sample was collected during that date.

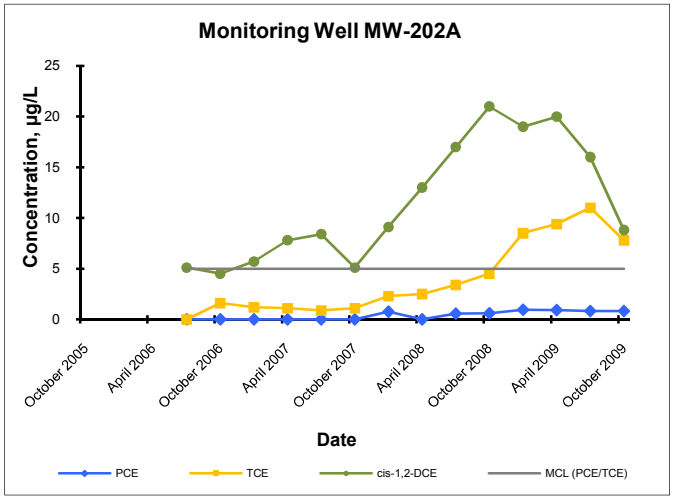




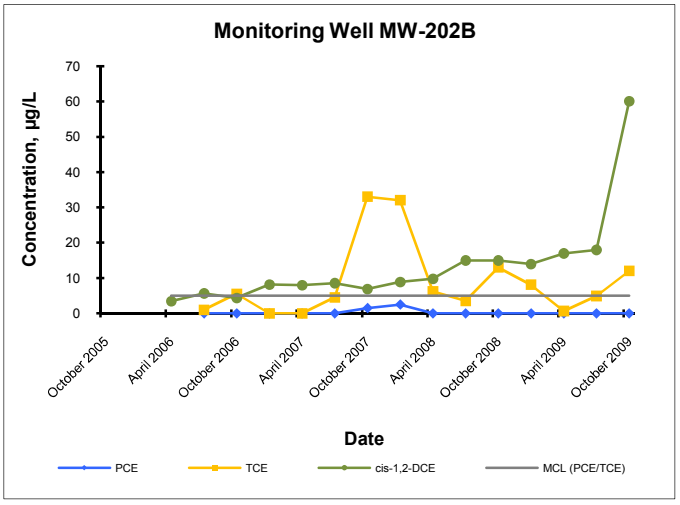


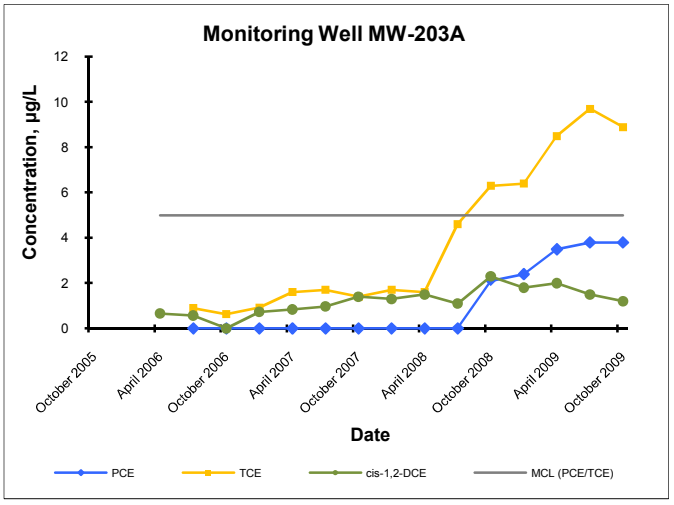


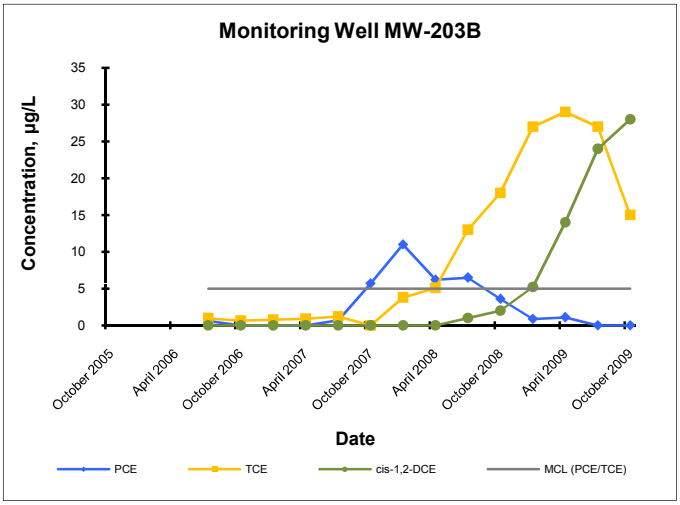


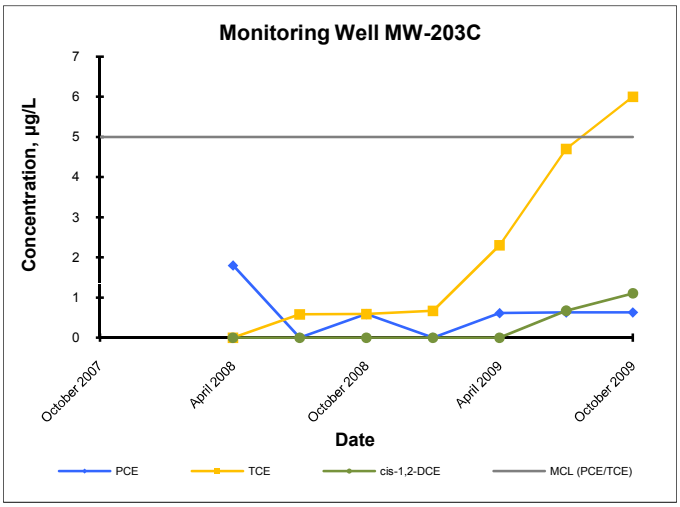


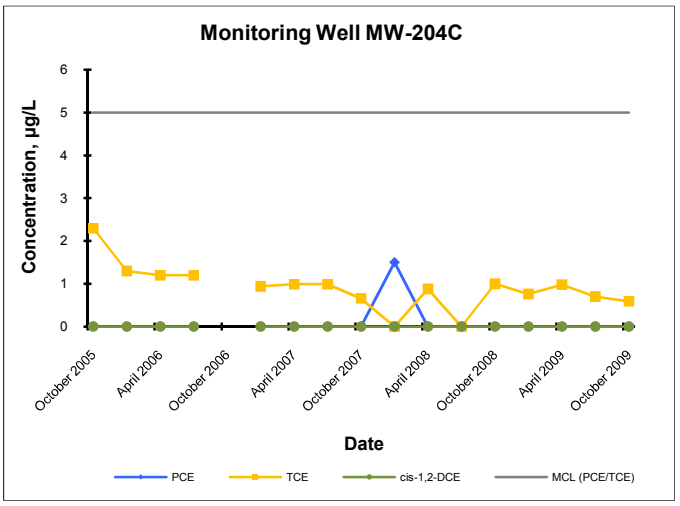
NOTE: Breaks in lines denote that no sample was collected during that date.

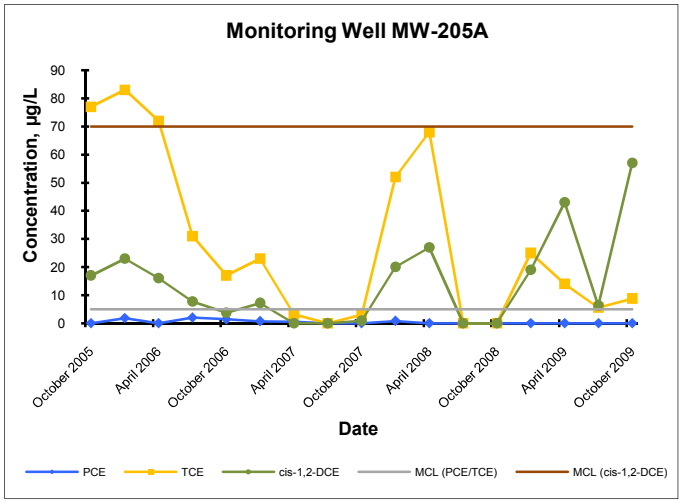




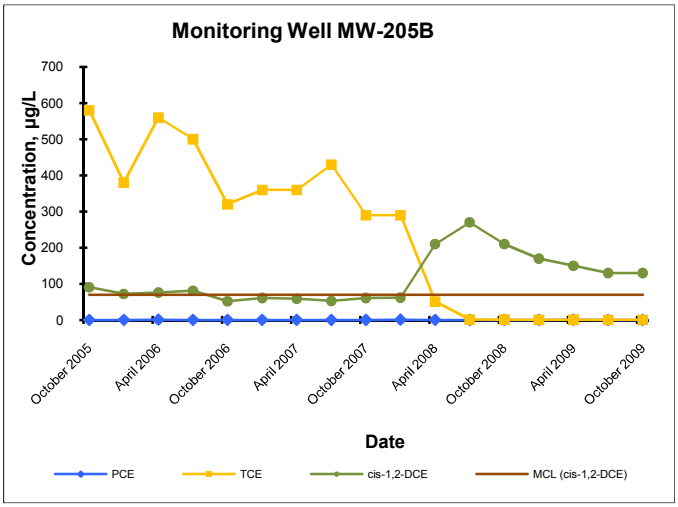


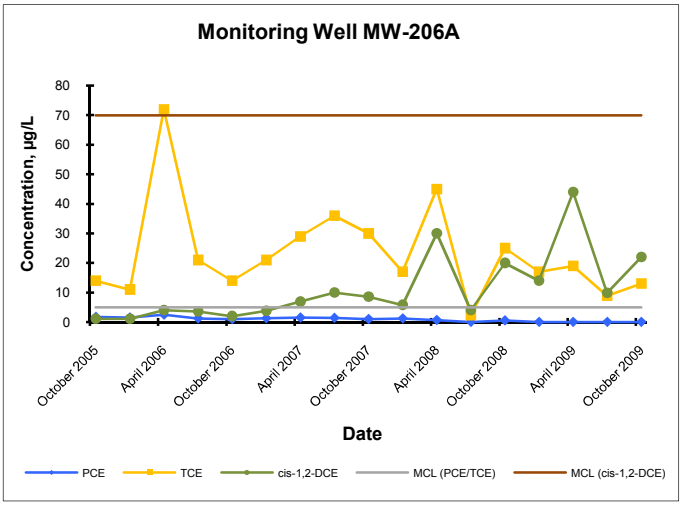


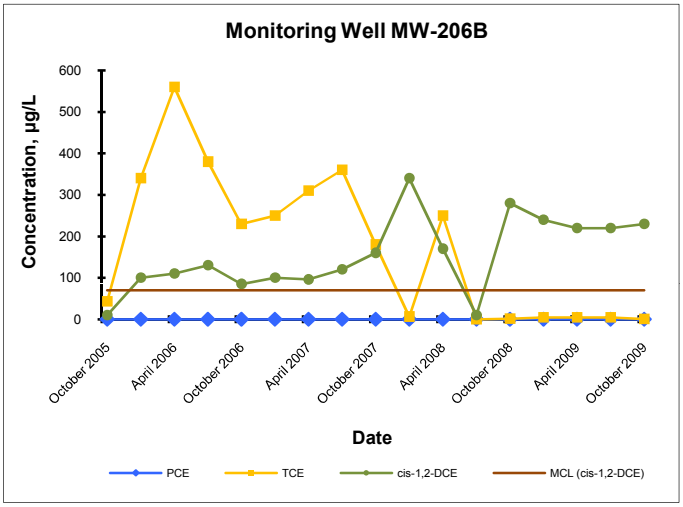


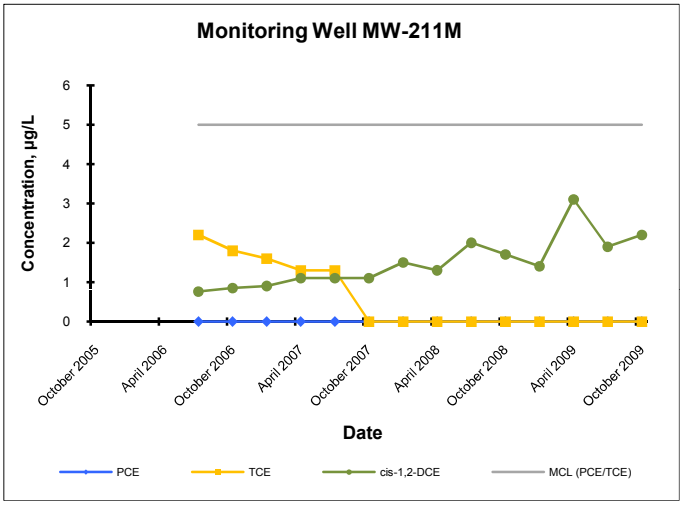


NOTE: Breaks in lines denote that no sample was collected during that date.

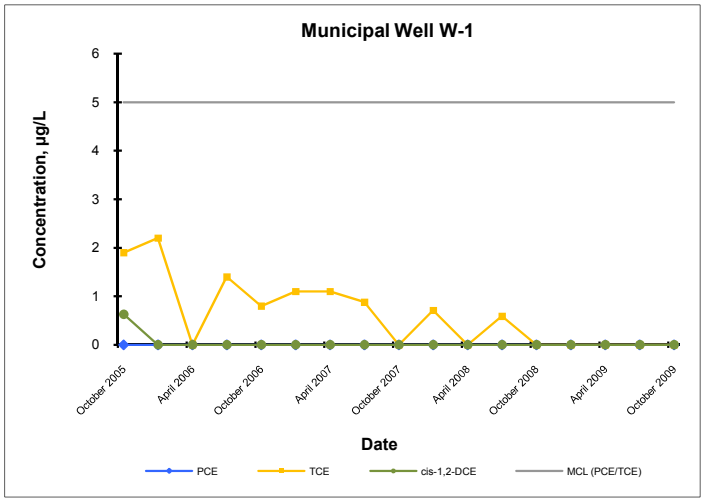


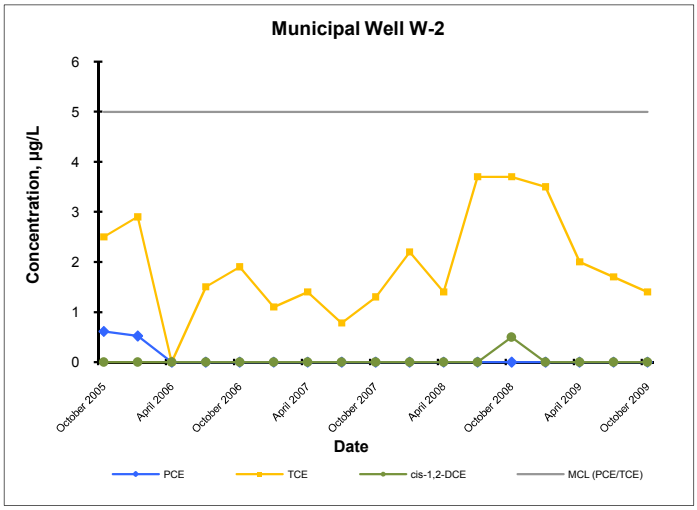


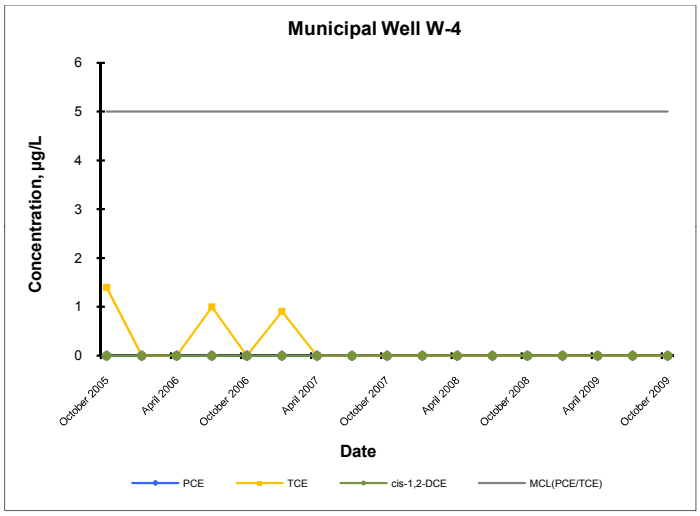


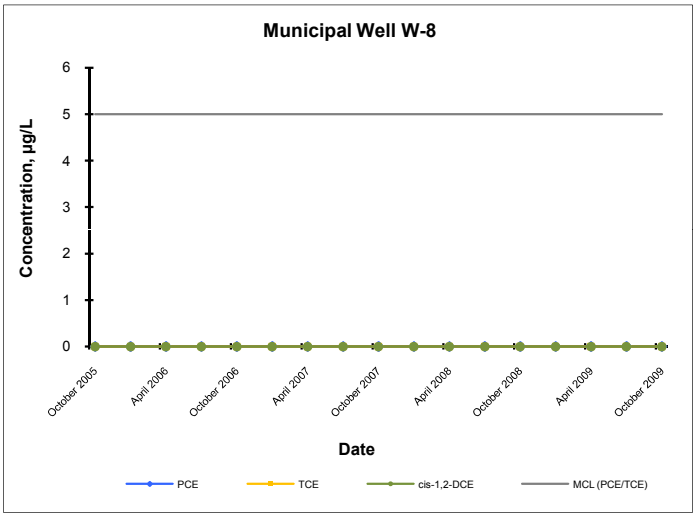


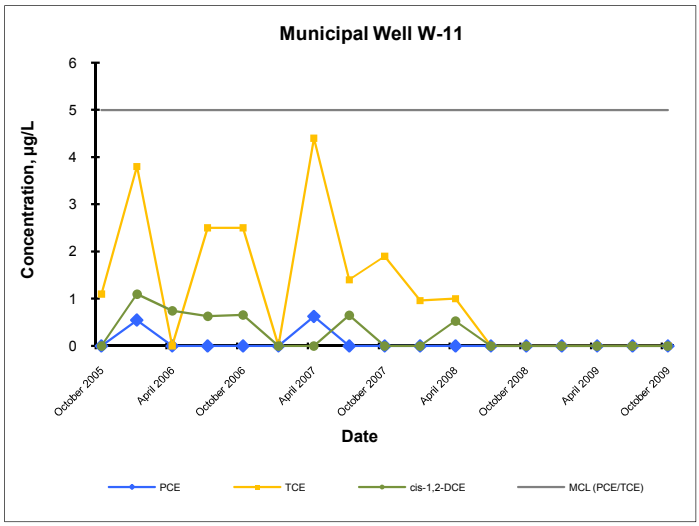
NOTE: Breaks in lines denote that no sample was collected during that date.

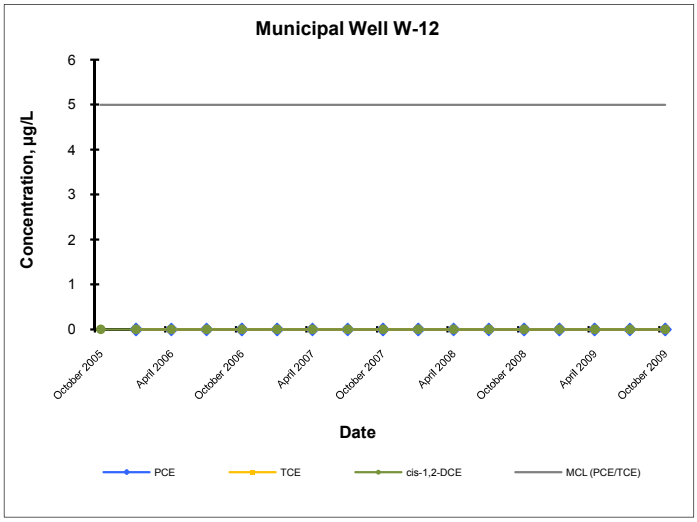




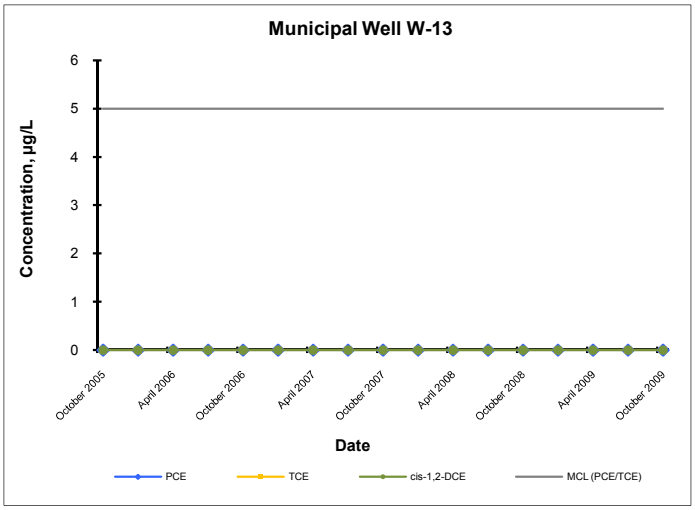


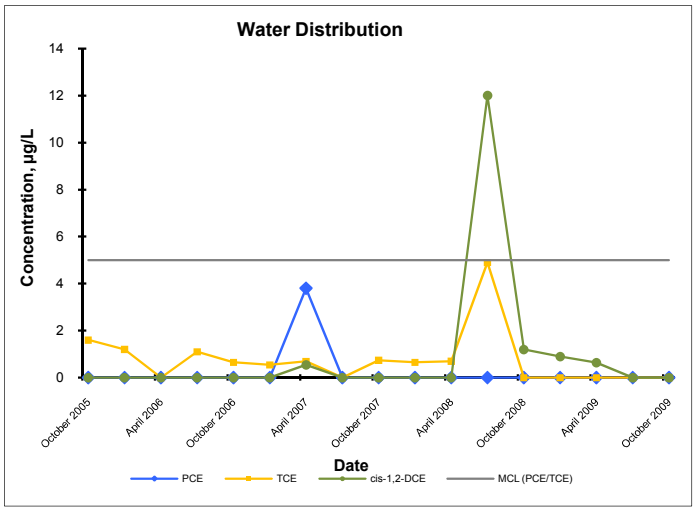




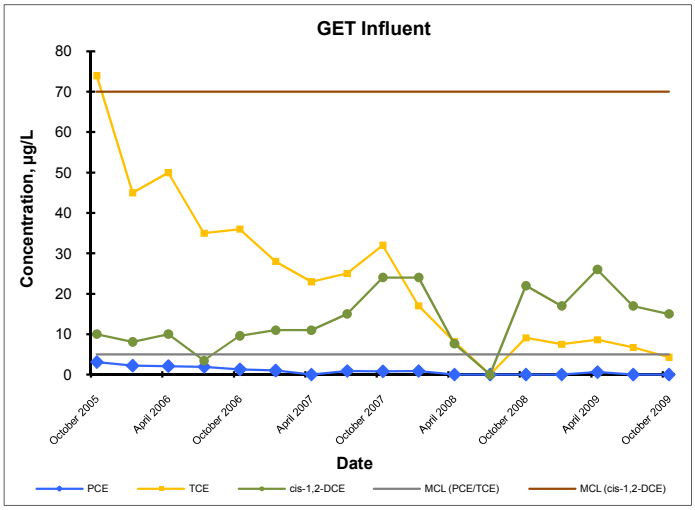


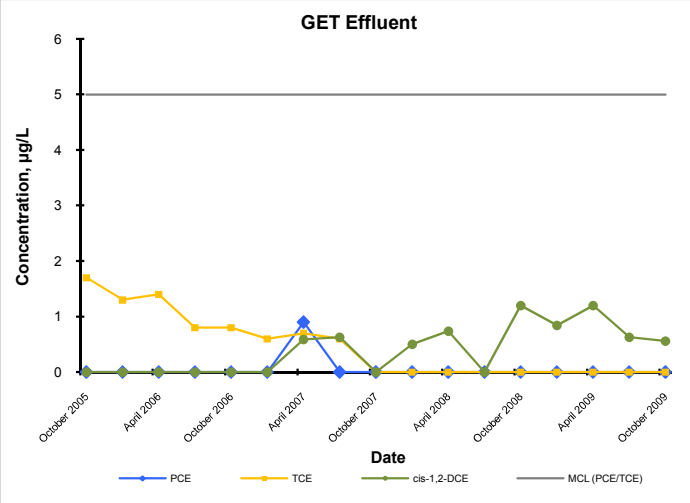
NOTE: Breaks in lines denote that no sample was collected during that date.

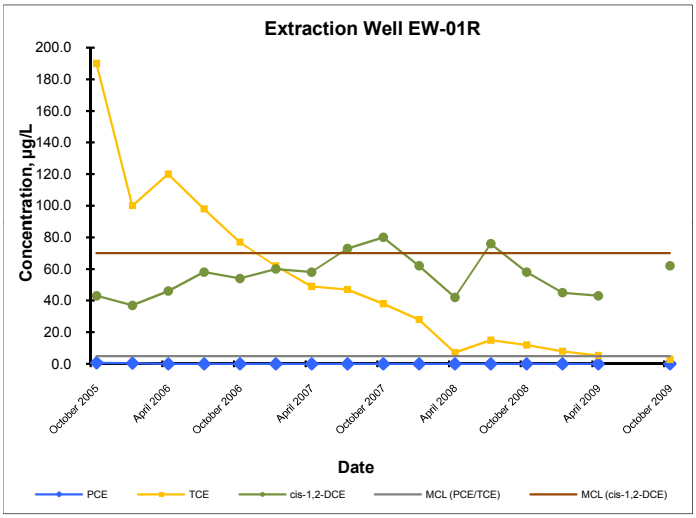


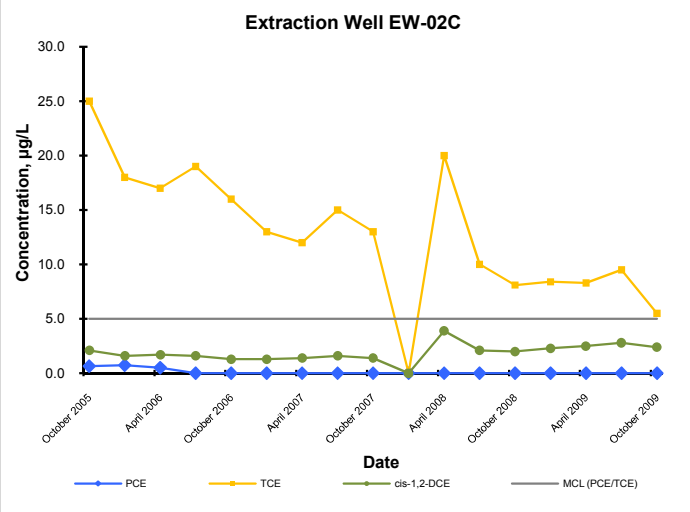


NOTE: Breaks in lines denote that no sample was collected during that date.

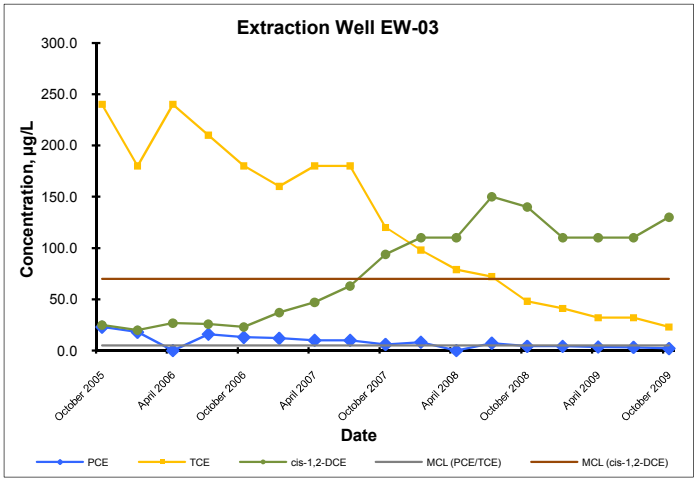


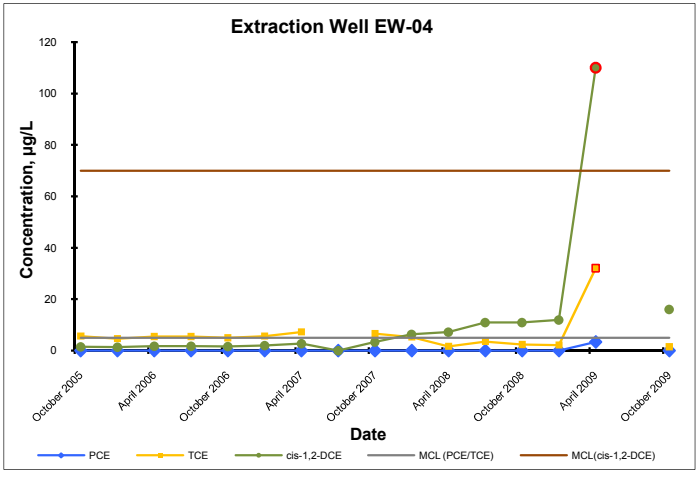






Note: July 2009 Data rejected due to laboratory QC problem.





Note: April 2009 data appears incorrect due to sample labeling error. Results are identical to EW-03 and not duplicated in subsequent sampling events.

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